OBERLANDER, MARVIN LEMAR

A COMPARATIVE STUDY OF THE MOUNT PLEASANT AREA CENTER LONGITUDINAL FOLLOW-UP OF VOCATIONAL EDUCATION GRADUATES WITH THE MICHIGAN DEPARTMENT OF EDUCATION ANNUAL FOLLOW-UP OF VOCATIONAL EDUCATION GRADUATES

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By

Marvin L. Oberlander

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ABSTRACT

A COMPARATIVE STUDY OF THE MOUNT PLEASANT AREA CENTER LONGITUDINAL FOLLOW-UP OF VOCATIONAL EDUCATION GRADUATES WITH THE MICHIGAN DEPARTMENT OF EDUCATION ANNUAL FOLLOW-UP OF VOCATIONAL EDUCATION GRADUATES

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The purpose of the study was to develop a longitudinal follow-up for graduates of the Mount Pleasant Michigan Area Center. These data were compared with the data collected by the Michigan Department of Education, Vocational Technical Education Services in their annual follow-up study of vocational education graduates in Michigan. The study focused on seven major objectives. To determine the: extent to which selected student characteristics effect their occupational choice, degree to which program graduates have continued their involvement in further occupational and/or educational preparation, extent to which time effected graduates employed in related occupations, impact of geographic location on related employment of graduates, effect of a longitudinal model on the evaluation of vocational education programs, consistency in related employment by program, and employment/unemployment of graduates.

To attain the stated objectives for the study, a longitudinal model was developed to collect data from 1285 graduates of the Mount

Pleasant Area Center from 1971 through 1976. The graduates were surveyed eight months, three, and five years after graduation. The follow-up instrument contained fourteen indices: employed full time, employed part time, not available for employment, unemployed, sex, marital status, military service, continued education full time, continued education part time, geographic location, program completers, program noncompleters, accumulative grade point average, and English grades.

Conclusions of the study were:

1. Graduates from the Mount Pleasant Area Center did not parallel the graduate data compiled by the Michigan Department of Vocational Technical Education Services.

   a. The average employment rate of these graduates was 3 percent higher than the State average. Important programmatic differences were noted in child care and machine shop, where employment was 22 and 33 percent higher, respectively, than the State average.

   b. The data revealed that graduates migrate to the specific occupations trained for rather than just to employment.

   c. 29 percent of these graduates continued in higher education compared to the State average of 4 percent.

   d. The Center's graduate average unemployment rate was 7 percent compared to 12 percent for Michigan.

   e. While the population in Isabella-Gratiot counties had a higher percentage of Caucasians (98 percent) than the

State average (88 percent), the graduate placement was equal for Caucasians and non-Caucasians.

2. The three- to five-year longitudinal model provided a better data base of vocational education graduates than an annual follow-up.

a. Related employment increased from 54 to 74 percent.

b. Overall employment increased from 74 to 81 percent.

c. The model provided a vehicle to monitor individual career paths.

d. The first and fifth years after graduation, 76 and 70 percent of the vocational education graduates were in the local community.

3. Graduates migrating out of the local community increased their opportunities in related employment.

4. Female vocational education graduates from the Mount Pleasant Area Vocational Center had a higher rate of employment in related occupations--76 percent compared to 55 percent for the males.

5. Employment related to instruction was higher for vocational education graduates who completed a vocational program than for noncompleters.

6. The majority of vocational education graduates had an overall grade point average and English grade of "C," with the exception of clerical and drafting programs, which had 50 percent with a "B" average or higher.

a. The overall grade point average for the vocational education graduates of some programs was significantly

lower than the normal population; however, their success in gaining employment (93 percent) was substantially higher than the normal population of this age group.

7. Graduates entering military service from the Mount Pleasant Area Center came primarily from trade and industrial programs.

ACKNOWLEDGMENTS

The writer is very grateful to the graduates who responded to the questionnaire and the staff at the Mount Pleasant Area Center for their assistance and cooperation in making this dissertation possible.

A special expression of appreciation is extended to Dr. Frank Bobbitt, Chairman of my Doctoral Committee, who has been a source of help and encouragement throughout the study.

A sincere thanks is due Dr. Daniel Kruger, Dr. George Ferns and Dr. Clifford Jump who gave so generously of their time and wise counsel during the progress of the study.

Lastly I dedicate this dissertation to my wife, Nelda, for her patience and support, for the inconvenience and disruption which she and my family have borne so understandingly on my behalf.

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CHAPTER I

THE PROBLEM

The area of educational evaluation has provided the basis for a series of ongoing debates since the inception of public education. Vocational education is no exception, for its history is intertwined with various evaluative questions and concerns. The passage of the Smith-Hughes Act in 1917 provided funds to public schools for vocational education; its values were challenged, not only by educators, but by society in general. Initially, evaluation techniques in vocational education were based on the number of students enrolled and increased program offerings. Beginning in the late sixties and early seventies, however, emphasis was added to include the evaluation of the success of the students as another critical component in measuring the effectiveness of the vocational programs. This shift in emphasis was in response to mounting legislative mandates and societal pressures calling for greater educational accountability, which related student attainment in vocational education programs to their success in subsequent employment opportunities.

While programs continue to be evaluated in terms of content, time, space, equipment, and various established standards, these factors do not necessarily ensure employment success for the students.

In the Vocational Education Amendments of 1968[1] the need for follow-up of graduates from vocational education programs was first cited as a federal requirement. As local vocational education directors began to collect data to comply with this federal mandate, it became obvious that students did not necessarily enter related occupations upon graduation. Some continued to pursue additional educational opportunities, while other students entered employment in unrelated occupations. Employment opportunities gained by students in related occupations also ranged from a high level of underutilization in some areas to fully utilized employment experience in others. The use of data with such broad variations to justify student or program success emerged as a perplexing problem. The educational dilemma in vocational education is further compounded by the type of evaluation research that has been completed. For example, general follow-up studies have compared vocational education graduates with non-vocational education graduates in regard to employment success, annual income, hourly wages, labor market networks, and length of time from graduation to employment. The literature also revealed a clear need for a longitudinal follow-up model that would provide an empirical data base on which to measure student success.

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[1] U.S. Congress, Vocational Education Amendments of 1968, Public Law 90-576, 90th Congress, 1st Session, 1968.

Background of the Study

The late nineteenth century and early twentieth century provided fertile ground for the growth of education for employment. In the nineteenth century demands were made of higher education in agriculture and engineering. This need was met with the passage of the Morrill Land Grant Act of 1862.[2] Due to the rapid growth of population and the vast expanse of country being settled, there was a widespread interest in special training for vocations by employers, employees, and educators alike. At that time, the public schools were clearly focused on general education and college education and did not include any significant emphasis on the needs of industry.

During the first two decades of the twentieth century, Congress enacted a number of laws providing aid for educational programs in or under the control of higher education. It was not until the Davis Bill of 1909,[3] however, that the term vocational education appeared in these bills. During the next eight years, several bills were introduced, none of which came to fruition, until the Commission on National Aid to Vocational Education[4] presented its report to Congress. The culminating result of this report was the passage of

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[2] The Morrill Land Grant Act of 1862 provided that public lands be granted to each state to provide an endowment and support of at least one college in each state to teach learning related to agriculture and mechanical arts.

[3] The Davis Bill of 1909 included an appropriation for the teaching of Agriculture, Home Economics and Domestic Arts in public schools.

[4] The Commission on National Aid to Vocational Education in 1914 recommended aid for day schools, part-time schools, and evening schools to teach Agriculture, Trade and Industry, and Home Economics.

the Smith-Hughes Act of 1917. The primary purpose of the Act was to provide federal aid to vocational education to prepare persons for employment, over fourteen years of age, who had entered and were preparing to enter the occupation for which they received training. The continued need for greater support of vocational education during the ensuing years prompted Congress to pass a number of additional acts.

The Vocational Education Act of 1963[5] authorized grants to assist states in maintaining, extending, and improving existing programs; developing new programs in vocational education, and providing part-time employment for youth who needed earnings from such employment to continue their pursuit of learning in vocational education. The emphasis for evaluation and accountability for vocational education throughout this period was based primarily on increased number of programs and student enrollment. The enrollment statistics collected and compiled by the federal government resulted in reporting the quantity rather than quality of programs provided.

The Vocational Education Amendments of 1968[6] provided a series of new dimensions in respect to the evaluation of vocational education. Applications for vocational programs from local districts required assurances of adequate planning to meet the vocational needs

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[5]U.S. Congress, Vocational Education Act of 1963, Public Law 88-210 88th Congress, 1st Session, 1963.

[6]U.S. Congress, Vocational Education Amendments of 1968, Public Law 90-576, 90th Congress, 1st Session, 1968.

of potential students in the area and a plan related to appropriate employment needs served by the agency. While these factors were inferred in the previous legislation, they were not mandatory. In order to fulfill these requirements, the other dimensions were added to the planning component. These include delivery and evaluation processes, assessment of student or potential student needs, assessment of employment needs in the area, and means for evaluating each area. Follow-up of graduates from vocational education programs, thus, became a requirement and a necessity if student and employment needs were to be assessed effectively.

The Vocational Education Amendments of 1968 also provided funds for research to evaluate vocational education programs. Since the amount of funds and enrollment were increasing at a significant rate, legislators, educators, and taxpayers were concerned whether duplication of programming and ever increasing expenditures were being appropriately matched to employment needs. In 1971, the Michigan Advisory Council for Vocational Education conducted an opinion survey on how important, adequate, and appropriate vocational education was to vocational high school graduates, parents, and employers in the State.[7] The results of this survey influenced the State Department of Education to integrate the follow-up of vocational graduates as an evaluation criterion for vocational education programs. In its 1973 annual report, the State Advisory Council emphasized that

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[7]Michigan Advisory Council for Vocational Education Opinions About Vocational Education in Michigan (Lansing, Mi., 1971), p. 1.

"students, both former or current, can give information about their preparation and about their personal and professional objectives, relating the school program to both."[8] Also, in 1973 the Michigan Department of Education reported that twenty-five K-12 school districts provided placement and follow-up services for their students.[9] Throughout the early seventies, the Michigan Department of Education continued to provide technical assistance to schools and Career Education Planning Districts to improve placement and follow-up services.

In 1974-75 follow-up of students became a part of the State Plan for Vocational Education. The Michigan Department of Education then initiated a mandatory follow-up program for all graduates from vocational education programs. By 1976, 511 local districts were participating in the annual follow-up of graduates from vocational education programs.[10]

In 1976 Congress passed Public Law 94-482, "The Education Amendments of 1976," which amended all previous vocational legislation to include an occupational information data system to evaluate vocational education. The Commissioner of Education and the Administrator of the National Center for Education Statistics were charged to jointly develop the occupational information data system. The data

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[8]Michigan Advisory Council for Vocational Education Fourth Annual Report (Lansing, Mi., June 30, 1973), p. 20.

[9]Michigan Department of Education Descriptive Report (Lansing, Mi., 1973-74).

[10]Michigan Department of Education, Michigan State Plan for Vocational Education (Lansing, Mi., 1976-77), p. 71.

information system included students, program, program completers and leavers, staff, facilities and equipment, and other information deemed important. This data system provided local schools and state departments of education with a data base to evaluate or monitor student progress while in school and to compare the effectiveness to graduates that became employed or continued in higher education.

Throughout the 1970's the support for guidance, placement, and follow-up activities continued to be increased by the federal, state, and local agencies. Guidance is a service provided by the educational system to assist students in selecting the most viable programs to match their interest and ability. Placement is another service provided for students and graduates in obtaining employment. Follow-up information, on the other hand, is the response from students as to his/her perceptions of the total educational delivery system, and, as such, it becomes an integral part of measuring student success, obtaining employment data, determining employment or further education needs, as well as predicting the success of future graduates.

Statement of the Problem

The breadth and complexity of vocational education has caused many educators and the public in general to question, assess, and propose alternative methods of evaluating its effectiveness. As new and different approaches are used to plan, fund, and operate vocational education programs, other evaluative questions come to the forefront. For example, what objectives and criteria are applied to funding? Is

the major emphasis on quantity of offerings or success of the student? Is the annual follow-up study a viable alternative for program evaluation?

Purpose

The purpose of this study was to develop a longitudinal follow-up model as an evaluation indicator of success of students enrolled in the vocational programs in the Mount Pleasant Area Center, Mount Pleasant, Michigan, and compared with the Michigan Department of Education annual follow-up of Vocational Education graduates.

Objectives

Specifically, the study focused on the following major objectives:

1. To determine the extent to which selected student characteristics effect their occupational choice.
2. To determine the degree to which program graduates have continued their involvement in further occupational training and/or educational preparation.
3. To determine the extent to which time had a relationship on the number of students employed in related occupational fields.
4. To determine the impact of geographic location on the related employment of program graduates.
5. To determine the extent to which a longitudinal model could be used to provide a data base for the evaluation of vocational education programs.

6. To determine the extent of consistency in related employment by program.
7. To determine the employment/unemployment levels of graduates.

Research Questions

1. How did the Mount Pleasant Area Center longitudinal study of first year vocational education graduates compare to the state annual follow-up of first year graduates in employment, other (not available for employment), continued education, and unemployment?

2. What effect did time have on the employment of vocational education graduates?

3. What effect did marital status have on the employment of vocational education graduates?

4. Was there a difference between the number of vocational education graduates who entered related employment upon graduation three and five years later?

5. Was the percentage of vocational education graduates employed in related occupations higher for program completers than for noncompleters?

6. Was the percentage of vocational education graduates employed in related occupations the same for male and female graduates?

7. Was there a difference between vocational education programs as to the number of vocational education graduates who pursued higher education?

8. Was the percentage of vocational education graduates continuing post-high school education higher for program completers than for noncompleters?

9. Did the majority of vocational education graduates remain in the local community?

10. Did the geographic location have an impact on related employment of vocational education graduates?

11. What percentage of the vocational education graduates entered military service, by vocational education programs?

12. Was there a difference in overall high school grade point average attained by vocational education graduates in different vocational education programs?

13. Was there a difference in English grades earned by vocational education graduates in different vocational education programs?

Significance of the Study

Student success in vocational education programs, as measured by the relationship of preparation and employment has, become one of the major criterion to evaluate vocational education's effectiveness. The mandatory graduate follow-up included in the information data system has provoked a major concern, primarily because of the time frame required to follow-up studies. The criterion of success for persons completing a vocational technical program was full-time employment in the field trained for, a related occupation, or employed part time while continuing their training in a related program within

eight months after program completion.[11] The requirement that eight months is adequate time for secondary students to fulfill the criteria of success makes some assumptions. First, that all students completing a particular program can be absorbed in the labor market upon completion, or are willing to migrate to labor markets that are open to entry. Second, that the economy is ready to absorb them or has immediate openings. Third, that the student had a firm commitment to an occupation and actively pursued a related occupation rather than attempting to transfer skills learned in a specific program to another occupation.

A variety of arguments exist for an annual follow-up. For example, graduates are more apt to respond in a shorter time period. They are easier to locate, and data collection and storage can be limited. Follow-up, as one component of a comprehensive evaluation model in the present form, has a limited contribution to make if based on a short-term response. The primary concern seems to be whether or not the vocational graduates are working immediately upon graduation, the relationship of school training to employment, and the financial gains.

An alternative to the annual follow-up is a longitudinal follow-up to map the vocational graduates' career decisions as they affect their employment. This should reveal both personal decisions and external factors that may directly or indirectly influence or

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[11] The Annual and Long Range State Plan for Vocational Education in Michigan (Lansing, Mi., 1978), p. 55.

shape the various alternatives that are followed by graduates as they migrate through their initial years of employment.

While state departments of education, area centers, employment agencies, and local districts are searching for alternative methods of evaluating vocational education programs to answer the question whether or not it is an effective means of public education (and if so, to what extent and under what conditions?), a series of other methods must be considered. Many of these may directly or indirectly influence or shape the various alternatives that are finally adopted. Findings from this study provide empirically based information which state, regional, and local educational agencies may use to evaluate existing programs, plan for the expansion, reduction or modification of programs, provide a model for other longitudinal studies, and provide empirical information on external factors that affect student choices.

Delimitations of the Study

The study was limited to 1,285 graduates who attended the Mount Pleasant Area Center. Those that graduated with a salable skill and/or completed a vocational education program in the 1971 through 1976 graduating classes were included in this study.

Another limitation of the study was that only programs that have been in operation since 1971 at the Mount Pleasant Area Center and have met established state guidelines for an approved vocational education program were included. Since empirical data was limited to the graduates of one center, the findings may be generalized only

to other centers or local districts who have similar programs. However, the model developed to collect and analyze data could be used by other institutions or state departments of education.

Assumptions of the Study

It was necessary to make certain assumptions to accomplish the objectives of the study. These assumptions were based partially on the expressed needs by legislation, educators, and others, that the present data base for evaluation of vocational education is limited in quantity or quality. There were five assumptions inherent to the design of the study.

1. There was a need for longitudinal information to assist in evaluating programs operating at the Mount Pleasant Area Center. This study would provide a data base for expansion or reduction of programs and provide some indication of effectiveness in graduate placement in employment or further education.

2. There was a need for a longitudinal model that would provide a profile of graduate patterns over a period of time to see how external forces impact their occupational choice.

3. That graduates, in light of their experiences after graduation, would provide a valuable data base for evaluating vocational education programs and student success in obtaining employment.

4. That there is an expressed need by the State Department of Education, the federal government,and other program operators for the information provided by this study.

5. That the model developed may be of assistance to other program planners, administrators, educators, and state department officials in other states.

Terminology of the Study

The following definitions are included to provide clarity of purpose and aid in the interpretation of the findings of this study.

Vocational Education: Organized educational programs, services, and activities which are directly related to the preparation of individuals for paid and unpaid employment, or for additional preparation for a career requiring other than baccalaureate or advanced degree.

Vocational Education Program: A program of study at the eleventh and/or twelfth grade designed specifically to prepare individuals for employment in an occupation or for additional preparation for a career requiring further training.

Area Center: A school offering specialized vocational training to prospective students in a geographical area designated by the State Board of Education usually involving more than one school district.

State Department of Education Annual Follow-up: Information collected by local agencies within eight months of completion from graduates of vocational programs as signified by the State Department of Education.

Location: The place where former graduates reside or work. For the purpose of this study, it included four categories:

(a) local community--Isabella and Gratiot counties; (b) Regional--counties surrounding Isabella and Gratiot counties, including Mecosta, Midland, Clare,and Saginaw counties; (c) In-State--located within the state of Michigan excluding counties given above; and (d) Out-State--located in a state other than Michigan.

Related Occupation: An occupation that requires the skills and knowledge learned in a specific vocational education program. For example, a student completing an automotive program that is employed as an auto mechanic, or a student that completed a secretarial program and is employed as a secretary.

Nonrelated Occupation: An occupation that requires knowledge and skills that were not taught in the program the student completed. For example, a student who completed an accounting program and is employed as a nurse's aide, or a student completing a food service program and is employed as a plumber.

Approved Vocational Education Program: An approved program must assure compliance with the Annual and Long Range State Plan for Vocational Education in Michigan and the Program Standards of Quality. The Standards of Quality consists of an advisory committee properly constituted for each program, a system of competency based education, an annual and long-range plan, placement and follow-up activities, vocationally certified teachers, and compliance with administrative regulations.

Follow-up: A survey of vocational education graduates to provide information regarding their employment, further education

and benefits they may have or have not received from the programs while in school.

Vocational Education Program Graduate: Program graduates for the purpose of this study are divided into two categories: (a) completers--students that have completed all the requirements of a specific program and have obtained entry level skills in an occupational field. For example, a student who completed two years of Graphic Reproduction. (b) leaver or prep student--a student that has completed 50 percent or less of a vocational program but may have acquired basic skills for employment. For example, completing one year of a two-year program.

The Annual and Long Range State Plan for Vocational Education in Michigan: This plan constitutes the basis for operation and administration of the State's vocational education programs. It includes the administrative provisions for the State Department of Education and all program operators, and the goals and objectives for vocational education in the state on a one- and five-year basis.

CHAPTER II

REVIEW OF LITERATURE

While the literature was limited regarding longitudinal follow-up of vocational education graduates, the identified studies provided an important base for the research being conducted. The controversy surrounding the effectiveness of vocational education was and is prevalent across the nation as represented by dialogue and discussion by local program administrators, State Department of Education personnel, and legislators at the state and national levels. This chapter contains findings of the follow-up studies completed in vocational education and information found in the literature regarding the need for longitudinal data.

During the last several decades, vocational education has taken its place in the educational delivery system as a means of promoting individual economic progress, social advancement, and equality of opportunity. Historically, vocational education's major goal was to prepare individuals for employment. It is now charged, like other segments of education, with a responsibility for addressing the myriad of social problems affecting all segments of the society. Within the narrow context, the primary goal of vocational education is difficult to attain because of the fluctuation of economic and political conditions. For example, there is no major means of predicting when the

labor markets will be amenable to an influx of prepared graduates, nor is there an option in postponing or deferring an individual's education under the existing structure of mandatory education to age sixteen and the corresponding pressures to complete high school prior to discontinuing the initial phase of education. Wirtz,[1] in his book, The Boundless Resource, wrote in great length on the topic. He pointed out that too little is known about how or when people decide to enter the labor market or even when it was possible for them to do so. The prevalent philosophy throughout the nation has been to allow each person to plan his own destiny in terms of life style or attainment in life. In other countries, students' educational programs are determined at a much younger age, which allows planners to match education to occupation for future employment. This option, of course, is not available in the United States because of differences in individual philosophy and societal pressures.

Evaluation in Vocational Education

While vocational education has received its share of criticism, it is not an easy task to resolve all of the identified concerns. One area that has compounded this problem has been the diversity of vocational education and its definition by legislation. Originally, it was defined as the phase or component of education that provided basic skills for entry level employment. This was interpreted by many as manipulative skills, others as cognitive

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[1]Willard Wirts, The Boundless Resource (Washington, D.C.: The New Republic Book Company, 1975).

and/or affective skills, and to some, all of these. Various legislative acts have altered the original intent considerably. During the 60's and 70's the definition was expanded to assist in the reduction of social disadvantages as well as the development of salable skills. Included in the expansion were such areas as ethnic origin, slow learners, handicapped, limited English speaking, economically disadvantaged, academically disadvantaged, as well as the unemployed. Meyers puts it in perspective by noting that:

> If vocational education's sole responsibility were to fulfill (employment) needs training, the mission would be relatively simple, but vocational education has an explicit mandate to serve the needs of the population. Looking at the (employment) needs assessment alone, the task is not easy because (employment) demands change rapidly due to economic conditions (prosperity and recession or depression), continuous technological advancements, and numerous shifts in the social and political obligations of those who purchase (employment) services.[2]

Over the years numerous methods of evaluation have been used in vocational education. Most of these focused on curriculum assessment, quantity of offerings, and the number of students enrolled in various programs. Wentling and Lawson[3] suggest that there are four major categories of program evaluation.

1. Context evaluation which should define the environment in which the program will take place, to discover the unmet needs of the community and students, to identify the constraints and problems

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[2]Warren G. Meyers, "Vocational Education and the Nation's Economy," The American Vocational Association, Inc., Year Book (Washington, D.C.: American Vocational Association, 1977), pp. 21-22.

[3]Tim L. Wentling and Tom E. Lawson, Evaluating Occupational Education and Training Programs (Boston, Mass.: Allyn and Bacon, 1975), p. 25.

underlying those needs, and the potential to meet those needs. Once these are identified, the goals and objectives can be formulated.

2. Input evaluation whose primary goal is to identify and assess the capabilities of the program agency. The goal of input evaluation is an analysis of alternative methods assessed in terms of their resources, time, and budget requirements.

3. Process evaluation should identify and monitor on a continuous basis if the program is being implemented as planned.

4. Product evaluation through follow-up should provide empirical data in regard to adequacy of the educational or training program in preparing for an entry level skill or for the success of an individual who has completed a retraining or upgrading program. It provides some insight into the adequacy of guidance, counseling, and ancillary services provided to participants while in the program. It provides information on career patterns, mobility patterns, employment, job satisfaction and further training, data on the social benefits accrued by the individual and society, the cost effectiveness of the programs, and the transfer payments involved in the process. Glenman observed in evaluating employment programs:

> There are benefits that are not measurable in dollar terms. Improvements in self image, improved access to public services because of better knowledge, less alienation from the world of work or from other segments of society, better health, improved reading and computational skills.[4]

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[4]Thomas K. Glenman, Evaluating Federal Manpower Programs, Memorandum RM-5743OED (Santa Monica, Calif.: Rand Corporation, 1969), p. 21.

Transferability of skills from one program or occupation to another, the ability to work and socialize with peers and society as a whole might also be added to this list. All of these contribute to the overall goals of education and are taught in vocational education programs, but they are difficult to convert to evaluation in the traditional manner.

Need For and Value of Longitudinal Studies

Longitudinal studies that have been completed assume various forms of product evaluation. While product evaluation in vocational education has been limited, its potential use provides a significant research base for the profession. Weinrich and Weinrich, in their recommendations to improvement of leadership in vocational education, stated that "a frequent critique of educational evaluation is that it has too often focused primarily on process and input, and only secondarily on context and product."[5]

Borus and Tash,[6] in their studies of measuring the impact of employment programs, addressed the issue of time in evaluating programs concluded that "measurements of impact as distinguished from indicators of success should occur no sooner than one year of the end of the program." To examine any shorter period would raise problems of

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[5]Ralph C. Weinrich and William J. Weinrich, Leadership in Administration of Vocational and Technical Education (Columbus, Ohio: Charles Merrill Publishing Company, 1974), p. 262.

[6]Michael E. Borus and William R. Tash, "Measuring the Impact of Manpower Programs," Institute of Labor and Industrial Relations (Ann Arbor, Mi.: University of Michigan, November 1970), pp. 32-33.

seasonality and put biased emphasis on factors connected with the programs which have only short run effects. "Evaluations should also be made at three and five year intervals to demonstrate the total effect of the program"[7] such as employment history since leaving the program, job statistics, and the potential of advancement in the career. Kruger,[8] in a lecture series at the Center for Vocational Education, The Ohio State University defined vocational education as a prime example of social intervention. He noted that it was a process through and by which education intercedes or intervenes to provide various specialized services to individuals; to improve the individual's employability so he/she can compete in the world of work. These services include career guidance, orientation to the world of work, occupational skills, and placement. Social intervention implies that vocational education also makes a contribution to the individual as well as society in addition to economic efficiency. Consequently, the outcomes of a given program must be evaluated against social goals and objectives. Providing occupational skills to enter and advance in a career, enhancing the self-image of students to realize that they can be a success,or motivating the unaffected to remain in school to attain the skills required in the world of work all contribute to social efficiency.

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[7]Ibid.

[8]Daniel H. Kruger, Occupational Preparation Programs: Implications for Vocational Education, Research and Development (Columbus, Ohio: The Center for Vocational Education, September 1977), p. 10.

> Society's mission is to serve humanity. The vocational programs were established and are being expanded to serve the student. These educational experiences do have an impact on the individual. It is too simplistic just to look at placements and on the basis of these data to make the quantum jump to say whether a program is successful or not successful. More meaningful longitudinal studies are needed to measure the impact of a vocational program on the students over time.[9]

Product evaluation for quality control has been a technique that has been used in the private sector for many years to evaluate the performance of a product or service. Leaders in vocational education can use product evaluation for maintaining and improving programs and to demonstrate the contribution the programs make to society and the economy. Smith, in describing the best techniques of evaluating the quality of vocational education, endorsed student follow-up studies by emphasizing that:

> A rational appraisal of program quality can best be secured through deliberate scrutiny of the performance of the former student as he/she interface with the real world of work. . . . Follow-up procedures, in the context of quality control must be continuous and multi-formed.[10]

The study by J. C. Flanagan et al.,[11] in 1960 provides a significant basis for the procession of educational evaluation through the use of longitudinal studies in vocational education. This study sampled 400,000 secondary school students in 1,353 public and private schools

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[9]Ibid.

[10]Wesley P. Smith, Placement and Follow-up (Washington, D.C.: American Vocational Association, Inc. Yearbook, 1974), p. 213.

[11]J. C. Flanagan et al., Project Talent. The Identification Development, and Utilization of Human Talents: The American High School Student (Pittsburgh, Pa.: University of Pittsburgh Press, 1964).

across the country. The study was aimed at obtaining an accurate inventory of the abilities and potential of American youth. Students in grades nine through twelve were tested using a wide range of educational and psychological measures including aptitude and ability tests, measures of educational achievement, interest, and personality characteristics. All students were followed approximately one year after graduation from high school and then again five and ten years later.

Project Talent generated numerous significant research findings. It provided data relating school characteristics to student outcomes, such as achievement, college attendance and drop out rate. The school characteristics most closely related to student outcomes were teacher salaries, teacher experience, the number of books in the library, and per pupil expenditure. In addition, it presented a number of findings regarding student's vocational aspirations and the ability of schools to meet vocational planning needs. It also revealed that many students had unrealistic plans about their future vocation. For example, many students aspire to an occupation that seems inappropriate in terms of intellectual level required. Students most frequently stated that guidance and counseling was the largest unmet need.

In a second longitudinal study, Herbert Parnes and associates[12] surveyed the behavior of a large sample of the labor force.

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[12]Herbert S. Parnes, The National Longitudinal Surveys: New Vistas for Labor Market Research (Columbus, Ohio: Center for Human Resource Research, The Ohio State University, 1976), pp. 6-7.

This study contributed a wealth of data on labor market experience. Four subsets of the civilian population in the United States studied, were middle-aged men who, at the inception of the study were 45 to 59 years of age; women 30 to 44 years old, 5,000 young men and boys, and 5,000 young women and girls between the ages of 14 and 24. These cohorts were chosen because each group was confronted with different labor market problems. For example, men in the 45 to 59 age group were confronted with skill obsolescence, age discrimination in attaining new employment, deteriorating health, retirement, etc. Women in the 30 to 44 age group were quite often faced with re-entry to the labor market, with lost or obsolete skills and heavy competition from younger women competing for the same positions. The youth cohorts were confronted with occupational choice and entry into the labor market. Parnes and associates,[13] in their study, "Five Years in the Work Lives of Middle-Aged Men," found that middle-aged men have clearly demonstrated that the degree of job satisfaction predicts the likelihood of a voluntary job separation. Vocational graduates are more likely than nonvocational graduates to obtain jobs within sixteen months after graduation, doing work in which they expect to use their training, somewhat less likely than nonvocational

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[13]Herbert S. Parnes et al., The Pre-Retirement Years: Five Years in the Work Lives of Middle-Aged Men (Columbus, Ohio, 1974), Chapters III and IV.

graduates who also received training to believe that they could have secured their job without the training.[14]

A third national longitudinal study of significance was the National Longitudinal Study of the High School Class of 1972.[15] The purpose of this study was to determine the employment and social patterns of young adults after they leave high school, as measured by their subsequent educational and vocational activities, plans, aspirations, and attitudes at various points in time. The study initiated in the spring of 1972 included a sample of 17,726 seniors from 1,040 high schools. Added to this base year data in October of 1973 were an additional 4,450 seniors from 250 schools who were unable to participate in the base year sample. The first year follow-up began in October of 1973 and ended in April 1974 with over 21,350 participants in the first year follow-up. Data collected in this study included such areas as participation in post-secondary education, academic ability, race, social class, sex, region, and high school curriculum. Some of their findings were: (1) 56 percent of the sample were currently enrolled in post-secondary programs; (2) 74 percent expected to further their education and 15 percent expected to receive advanced degrees; (3) of the students who were enrolled in

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[14]William Fetters, A Capsule Description of First Follow-up Survey Data, National Center for Educational Statistics (Washington, D.C.: Government Printing Office, 1966).

[15]National Center for Education Statistics, A Capsule Description of First Follow-up Survey Data, U.S. Department of Health, Education and Welfare Research Triangle Pact (North Carolina: The Research Triangle Institute Contract #OEC-0-73-6666, 1976), pp. 1, 7-8.

academic studies in a two- or four-year college during the fall and winter of 1973-74, 68 percent had been enrolled in a college preparatory high school program, as compared to 27 percent of the general high school program and 13 percent of the vocational-technical students pursuing college degrees; (4) curriculum placement appeared to have virtually no relation to other types of post-secondary education; (5) of all seniors, 14 percent were enrolled in vocational-technical studies at either public or proprietary schools. Of the students enrolled in vocational-technical programs in high school, 70 percent were employed in jobs in October of 1973, compared to 68 percent from general programs and 56 percent from academic programs; (6) women who had been enrolled in vocational-technical programs in high school and who were not employed were more likely to cite, "was full-time homemaker" than any other reason for not working. One-half (50 percent) of these gave this response in contrast to 11 percent for employed women who had been in academic programs in high school; (7) of the vocational technical students, 64 percent were much more likely than others to have obtained specialized training in high school which they intended to use to obtain employment upon graduation, compared to 25 percent of the general education students and 12 percent of the academic students.

These studies were on a national basis and supported by either federal or foundation funds. The information collected and analyzed did not specifically address vocational education as their primary goal; however, the data did provide impetus for other studies

in vocational education and the use of vocational education as a major educational delivery system in the nation. This research also suggests the major contribution that longitudinal studies can have as compared with research attempting to analyze the "state of the art." Parnes most aptly described the importance of such studies by noting that: "Perhaps the single most important contribution of longitudinal data is that they facilitate the identification of casual relationships that cannot confidently be identified in any other way."[16] One example was the relationship between attitude and behavior. In cross sectional data such relationships are ambiguous, since one cannot be certain whether the attitude produces or reflects the behavior. Did job dissatisfaction lead to turnover or did an association between the variables simply mean that individuals who quit jobs were likely to rationalize their behavior by reporting (retrospectively) that they were unhappy? When attitudes measured at one point in time can be related to subsequent behavior, it is more likely that such ambiguity will disappear.

Vocational Education Follow-up Studies

Numerous studies have been completed in comparing nonvocational education and vocational education. Typically, these studies have focused on cost effectiveness of vocational education, attitudes of graduates and employers, mobility, stability of vocational

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[16]Herbert S. Parnes, The National Longitudinal Surveys: New Vistas for Labor Market Research (Columbus, Ohio: Center for Human Resource Research, The Ohio State University, 1976), pp. 6-7.

education graduates, and further education. Practically all of the studies were based on a specific point in time basis. Only limited research has been completed on a longitudinal basis which follows career paths and employment patterns of former students and graduates.

Eninger[17] conducted one of the most comprehensive follow-up studies with a sample of 5,327 former vocational students randomly drawn from 100 schools that offered programs in trade and industrial education. His study was based on the major areas of the length of time required for graduates to attain a full-time job, the relationship of the job to the educational program pursued while in school, geographic mobility of the graduates, and how satisfied the graduates were with their employment. Data on earnings, employment security, and employee stability were also included. Some of his significant findings included:

1. A great majority of trade and industrial education graduates typically go directly to work, 36 to 40 percent enter unrelated jobs.

2. About 87 percent of the graduates had never moved out of the community in which they went to school. Of those who moved, almost three-fourths moved to a location within 300 miles of the community in which they received their schooling.

3. The graduates in related occupations reported a high degree of job satisfaction, expressing higher satisfaction than

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[17]Max U. Eninger, The Process and Product of Trade and Industry High School Level Vocational Education in the United States (Pittsburgh, Pa.: Educational System Research Institute, April 1968), pp. 4 and 17.

either the academic graduates or those who were in unrelated occupations.

In a study sponsored by the Ohio Advisory Council for Vocational Education[18] 1022 individuals, 511 employers, 254 graduates of vocational education programs and 257 graduates of general and academic programs were interviewed. The purpose of this study was to obtain answers to such questions as: Did approved reimbursable vocational education programs show any positive results? Did vocational education produce graduates trained for meaningful employment? Did vocational education have any effect on job attitudes of its graduates as employees? Did employers find that vocational education graduates make different or better employees than Ohio high school graduates from other programs? The studies noted that:

1. More than other high school graduates, vocational education students decided on their course program because it was what they really wanted. Vocational education graduates felt that their high school prepared them to face the real problems in life and their first full-time job.

2. In their attitudes towards jobs, vocational education graduates felt there was a good future in their job. They expected to receive higher pay for promotions and found supervision more satisfying. They had less desire to change occupations and felt better trained for their jobs.

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[18]Ohio Advisory Council for Vocational Education, Employers and Young Adults Look at Vocational Education (Columbus, Ohio, 1973).

3. Employers gave vocational education graduates higher ratings in skills and technical knowledge for entry level employment, willingness to learn new jobs, work habits, promotability, attitudes toward company and management, and concern for productivity and safety.

Creech et al.,[19] in a comparative analysis of the members of the High School Class of 1972, 23,000 potential respondents for the period between their graduation from high school in 1972 and the first follow-up 18 months later. They concluded that: (1) the labor force participation rates of young workers was on the increase for whites and females. Of the class of 1972, 65 percent were employed and 8 percent were out of work. The employment of blacks (58 percent) was lower than that of whites (66 percent). Graduates of vocational schools were employed at a higher rate than others (77 percent), compared to (68 percent) for general education and (59 percent) for academic graduates; (2) of those who continued their education, 42 percent were taking academic courses in a college or university. Whites (43 percent) were more likely than blacks (35 percent) to be taking academic course work, but blacks (16 percent) were more likely than whites (14 percent) to be taking vocational or technical post-secondary classes; (3) the number of females in the class who indicated they were homemakers was 29 percent.

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[19]Reid F. Creech et al., Comparative Analysis of Postsecondary Occupational and Educational Outcomes for the High School Class of 1972 (Princeton, N.J.: Educational Testing Service, U.S. Department of Health, Education and Welfare, May 1977).

Conroy and Diamond[20] completed a comparative study of nonvocational and academic students with vocational students in Massachusetts. The study made in 1975 included students who graduated from high school in 1969 and 1973. Their objective was to examine the impact of various secondary school programs on the lifestyle of students. Major attention was focused upon school-labor relation to provide a knowledge base to improve policy for secondary education. The findings emphasized that: (1) There was a significant difference between the earnings of male and female students; (2) Although there was no significant difference between the average income of all 1969 occupational and nonoccupational students who did not pursue postsecondary education, there was a significant average annual income difference in favor of all occupational students for the class of 1973; (3) Trade and industrial program students who did not attend a postsecondary school have a significantly more favorable labor market experience than nonoccupational students who did not attend a postsecondary school. In the 1969 cohort they earned almost $2,000 more per year than their nonoccupational counterpart; (4) Trade and industrial students who did not attend postsecondary schools also earn significantly more than male students from all programs who attended or graduated from two year public colleges and four year universities; (5) The superior labor market experience of occupational students, especially trade and industrial program enrollees,

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[20]William G. Conroy, Jr. and Daniel E. Diamond, The Impact of Secondary School Occupational Education in Massachusetts (Lowell, Ma.: College of Management Sciences, University of Lowell, 1976), pp. 9-10.

seem to result from the independent effect of the school program. Factors such as socio-economic and scholastic aptitude fail to explain the comparative success of occupational students in the labor market. Indeed, occupational students came from lower socio-economic levels and had lower scholastic aptitude than nonoccupational students.

Laska and Chiou[21] completed a comparative study of 3,045 vocational and nonvocational graduates of seventeen high schools in three cities, Austin, San Antonio, and Houston. They studied six variables including accumulated income, monthly earnings, hourly rate, weekly working hours, number of months employed, and length of time remained in a job. Among their findings were: (1) A significant difference of accumulated income and actual job length between non-college vocational and nonvocational graduates of both sexes; (2) They concluded, based on their findings, that continued support of secondary vocational education can be justified for those who wish to enter the world of work rather than attend college after graduation from high school.

Richardson and McFadden[22] completed a study on employment patterns and earnings of 1,000 secondary school vocational education

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[21]John A. Laska and Jaw-Woie Chiou, A Comparative Study of the Occupational Achievement of Vocational and Non-Vocational High School Graduates in Texas (Austin, Texas: Department of Cultural Foundation of Education Center for International Education, University of Texas, Final Report, June 1973), p. 5.

[22]William B. Richardson and Joan R. McFadden, Employment Patterns and Earnings of Secondary Schools Vocational Education Graduates (Indianapolis, Indiana: Department of Education, Indiana State Board of Vocational and Technical Education RCU Task Report, March 1977).

graduates from twenty-five randomly selected schools in Indiana. Their findings revealed that:

1. Many of the graduates, 76 percent, sought full-time employment.
2. More than 50 percent found work in the area they received training in.
3. The average time required to obtain employment after graduation was two months or less.
4. Earnings data did not support the premise that significantly higher earnings results when graduates were employed in the area trained for.

Although the previous studies represent different geographic areas and the objectives are somewhat different, a number of findings are similar. It is important to note that the attitudes of vocational education graduates were more positive than nonvocational graduates, towards their employers, the work they were performing, and their future in the occupation. Generally from 60 to 70 percent of the students that sought employment after graduation were employed and in most cases earned more than their counterparts who did not participate in vocational education programs.

A partial analysis of the annual follow-up of the 1975-76-77 vocational education graduates by local program operators to fulfill the Michigan Department of Education's Vocational Technical Education

Service[23] revealed that the number of graduates employed continues to increase annually (see Appendix A). This was based on data collected from ninety-seven U.S. Office of Education codes or occupational titles divided into the major categories of: Agriculture (01.0000), Distributive Education (04.0000), Health Education (07.0000), wage earning Home Economics (09.0000), Business Education (14.0000), and Trade and Industrial (17.0000).

In 1975, six months after program completion, 25,575 vocational education graduates reported that they were available for job placement. Of this cohort, 82.5 percent or 22,571 were actually employed. Of the graduates, 9,144, or 33.2 percent, were employed full time in an occupation related to their high school preparation program. Graduates employed in occupations not related to previous training were 5,685 or 20.6 percent. Graduates employed full time in fields such as armed services were 1,025 or 3.7 percent. Graduates employed on a part-time basis were 6,897 or 25 percent of the cohort. The other 17.5 percent or 4,824 graduates classified as unemployed and seeking were distributed in three categories of continued education, full time 1,012 or 3.7 percent, continued education, part time 381 or 1.4 percent, and 3,431 or 12.4 percent unemployed and seeking work.

The class of 1976 had 31,200 graduates available for placement. Six months later on the follow-up, 26,714 or 85.6 percent

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[23]Michigan Department of Education, Annual Vocational Education Job Placement Summary by Program (Lansing, Mi., 1975, 1976, 1977), Form 0607.

were employed. Graduates employed in an occupational area related to their previous training were 11,305 or 36.2 percent. Those employed in occupations not related to their previous schooling were 6,698 or 21.5 percent. The number enlisted in the armed services was 1,263 or 4.05 percent. Those reporting part-time employment were 7,448 or 22.4 percent. The number of students who continued their education on a full-time basis was 894 or 2.9 percent, and 303 or 1 percent continued their education on a part-time basis, while 3,290 or 10.5 percent were still seeking employment.

The findings of the graduates from the 1977 class revealed that 34,961 were available for work. Of these, 86.9 percent or 30,372 were employed. The number in occupations related to their vocational education was 13,405 or 38.3 percent. A total of 7,727 or 22.1 percent of the graduates were employed in unrelated occupations. There were 1,398 or 4 percent in the armed services. Graduates employed on a part-time basis were 7,842 or 22.4 percent; continuing education full time were 603 or 1.7 percent; continuing education part time were 246 or .7 percent; and seeking employment were 10.7 percent or 3,740 graduates. To provide comparative analysis between individual program areas and total data, the researcher extracted twelve occupational areas[24] (see Appendix A) from these annual follow-up data for the years 1975, 1976, and 1977.

Forestry (01.0700) had a declining enrollment rate from 1975 to 1977 from a high of 52 students to a low of 34 students. The

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[24]Ibid.

number employed in a related occupation after graduation varied some from one year to the next but averaged about 25 percent annually. The number in full-time unrelated employment increased from 22.2 percent in 1975 to 52.9 percent in 1977 while the number in part-time employment declined from 22.2 percent to 8.8 percent. The Building Trades (17.1000) and Clerical (14.9700) programs' enrollment declined 54 and 36 percent. However, the number of students employed increased annually for the Building Trades program from 87.1 to 89 percent and the Clerical program from 78.8 to 86.5 percent. Part of the enrollment decline in Building Trades and Clerical areas was due to reclassification of U.S. Office of Education codes from one year to the next by the State Department of Vocational-Technical Education Services. The other nine program enrollments continued to increase their growth rate from 31 to 54 percent over the three-year period. The total number of graduates employed varied from a low of 69 percent for Child Care to a high of 92.5 percent for Machine Shop. Machine Shop (17.2303) had the highest overall employment, 92.5 percent and also the highest placement rate in related occupation, 54 percent. Child Care, on the other hand, had the lowest placement rate in a related occupation, 22.4 percent. Child Care also had the highest consistent unemployment rate of 18 to 23.5 percent. Drafting and Electronics had the lowest unemployment rate of the three-year period, approximately 6 percent.

All Trade and Industrial programs had a lower unemployment rate, generally 10 percent or less, while Office Education, Food

Services, Child Care,and Agriculture were consistently over 10 percent. However, the full-time unrelated employment consistently ranged higher for the Trade and Industrial programs from 25.3 to 29.5 percent and Forestry from 22.2 to 52.9 percent, while Clerical, Food Service, Nurses Aides, and Distributive Education ranged from 11.3 to 22.9 percent.

Part-time employment was higher in programs that traditionally enrolled females than in those that were predominantly male oriented. Enrollments continued to increase for these programs. The enrollment increase undoubtedly was due to the fact that through the seventies the number of Area Centers increased from six to thirty-two and it took at least two years to have graduates that completed a program after the Centers opened. The other significant finding was that placement in occupations continued to improve and the number of unemployed continued to decrease indicating that employers were beginning to recognize that these graduates had previous experience that was of value to the employers. It also allowed the schools to begin to refine the programs in terms of the needs of employers.

In 1977 Lippert[25] completed a field study of the graduates from 1968 to 1977 that completed the Food Service Program (09.0203) at the Mount Pleasant Area Center. The primary questions were: Did graduates of the Food Service program become managers or owners of food establishments? Or did some migrate to other areas? How many

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[25]Robert J. Lippert, An Analysis of the Mount Pleasant Area Center Vocational Food Service Program (Mt. Pleasant, Mi.: Field Study for the Degree of Ed.S., Central Michigan University, 1977).

graduates remained in the Food Service area after graduation? He noted that: (1) It took approximately four years for graduates to begin to move from employees to management; (2) In four years time, 20 percent were owner managers of food establishments and 28 percent were owners or managers of unrelated businesses; (3) Five years later 40 percent were still in food service and 21 percent were married and not working; (4) The first two years after graduation, more than 50 percent were employed in the food service industry. Over the years, the enrollment of food service classes was almost a 50-50 split between male and female, which was not too atypical of the food service industry as a whole. Frequently, as the female population gets married, they tend to drop out of the labor market for a few years to raise a family and possibly at a later date re-enter again.

Labor Market Review

The composition of the labor force reflects the person power needs of the nation, state, local community, and, to a large degree, the success of vocational graduates as well as vocational programs. Therefore, career and program planning are dependent on a sound labor force data base. Michigan Statistical Abstract[25] lists ten major categories of occupations that comprise the total employed labor force in the state, by region and county. An analysis of these categories at the State and Isabella-Gratiot counties levels reveals the following percentages of employment for each category (see Table 1). Total

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[25]Division of Research, Graduate School of Business Administration, Michigan Statistical Abstract (Lansing, Mi.: Michigan State University, Eleventh Edition, 1976).

TABLE 1.--Composition of the State of Michigan Labor Force and the Isabella-Gratiot Counties Labor Force by Occupations --1970 (Labor Force--16 years and over)

Occupation	State		Isabella-Gratiot	
	Employed	% of Total	Employed	% of Total
Professional-Technical	461,818	14.2	4,084	13.9
Managers and Administrators	227,381	7.0	1,846	6.3
Sales Workers	220,605	6.8	1,665	5.7
Clerical	550,034	16.9	4,652	15.8
Craftsmen	499,767	15.3	3,845	13.0
Operatives (except transport)	571,154	17.6	4,142	14.1
Transport Equipment Operators	124,626	3.8	1,171	4.0
Laborers (nonfarm)	130,857	4.0	1,063	3.6
Service Workers	418,504	12.9	5,365	18.3
Farm Workers	48,084	1.5	1,544	5.3
TOTALS	3,252,830	100.0	29,377	100.0

number employed in the State were 3,252,830, in Isabella-Gratiot counties 29,377. Employed at the State level in professional and technical occupations were 461,818 or 14.2 percent; in Isabella-Gratiot counties 4,084 or 13.9 percent. Employed in managerial and administrative occupations in the State were 227,381 or 7 percent, in Isabella-Gratiot counties 1,846 or 6.3 percent. Employed as sales workers in the State were 220,605 or 6.8 percent, in Isabella-Gratiot counties 1,665 or 5.7 percent. Employed in clerical occupations in the State were 550,034 or 16.9 percent, in Isabella-Gratiot counties 4,652 or 15.8 percent. Employed as craftsmen in the State were 499,767 or 15.3 percent, in Isabella-Gratiot counties 3,845 or 13 percent. Employed as operatives (except transport) in the State were 571,154 or 17.6 percent, in Isabella-Gratiot counties 4,142 or 14.1 percent. Employed as transport equipment operators in the State were 124,626 or 3.8 percent, in Isabella-Gratiot counties 1,171 or 4.0 percent. Employed as laborers (nonfarm) in the State were 130,857 or 4.0 percent, in Isabella-Gratiot counties 1,063 or 3.6 percent. Employed as service workers in the State were 418,504 or 12.9 percent, in Isabella-Gratiot counties 5,365 or 18.3 percent. Employed as farm workers in the State were 48,084 or 1.5 percent, in Isabella-Gratiot counties, 1,544 or 5.3 percent.

In a rank order comparison of employment in the ten categories, four occupational categories ranked different in Isabella-Gratiot counties than in the State Labor Market (see Table 2). In Isabella-Gratiot counties service occupations ranked number one as compared

TABLE 2.--Composition of the Isabella-Gratiot Counties Labor Force in Rank Order Compared to the State of Michigan Labor Force Rank Order by Occupation

Occupation	Isabella-Gratiot Rank Order	State of Michigan Rank Order
Service Worker	1	5
Clerical	2	2
Operatives (except transport)	3	1
Professional-Technical	4	4
Craftsman	5	5
Manager and Administrators	6	6
Sales Workers	7	7
Farm Workers	8	10
Transport Equipment Operators	9	9
Laborers	10	8

to the State labor force ranking of number 5 for service workers. Clerical occupations ranked number 2 in both the State labor force and Isabella-Gratiot counties. Operatives (except transport) ranked number 3 in Isabella-Gratiot counties and number 1 in the State labor force. Professional, technical occupations ranked 4 in both the State and Isabella-Gratiot counties. Craftsman ranked number 5, managers and administrators number 6, and sales number 7 in both the State and Isabella-Gratiot counties. Farm workers ranked number 8 in Isabella-Gratiot counties and number 10 in the State. Transport equipment operators ranked number 9 in the State and Isabella-Gratiot counties and laborers ranked number 10 in Isabella-Gratiot counties and number 8 in the State labor force.

The Isabella-Gratiot counties labor force composition was somewhat more service oriented and had occupations that required related training for entry to employment as compared to the State labor force. For example, labor occupations ranked number 10 in Isabella-Gratiot counties and number 8 in the State. Service occupations, which included food service, health service, personal services, etc., ranked number 1 in Isabella-Gratiot counties and number 5 in the State. These types of occupations were somewhat easier to enter for high school vocational education graduates than professional or managerial occupations.

Population by Race

Based on the Eleventh Edition of the Michigan Statistical Abstract[26] a comparison of the population by race in the State and Isabella-Gratiot counties, the following data were revealed (see Table 3).

In the State of Michigan 7,833,474 or 88.23 percent of the population was white; in Isabella-Gratiot counties 42,522 or 98.8 percent were white. The Negro population in the State was 991,066 or 11.8 percent; in Isabella-Gratiot counties 162 or .38 percent were Negro. The Indian population in the State was 16,854 or .2 percent; in Isabella-Gratiot counties it was 211 or .5 percent. The Asian population in the State was 15,285 or .7 percent; in Isabella-Gratiot counties it was .09 percent. All other races in the State were 18,404 or .2 percent; in Isabella-Gratiot counties it was 2.3 percent. The population in Isabella-Gratiot counties varied from the State in that 98.8 percent of the population was white while in the State as a whole only 88.23 percent were white.

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[26] Ibid.

TABLE 3.--Population Comparison of the State of Michigan by Race with Isabella-Gratiot Counties Population by Race (1970 Census)

	White		Negro		Indian		Asian		Other	
	N	%	N	%	N	%	N	%	N	%
State of Michigan (8,875,083)	7,833,474	88.23	991,066	11.2	16,854	.2	15,285	.17	18,404	.20
Isabella-Gratiot Counties (43,035)	42,522	98.80	162	.38	211	.5	37	.09	103	.23

CHAPTER III

METHODOLOGY AND DATA COLLECTION

This longitudinal follow-up study was designed to determine the effect of selected variables on the success of vocational education graduates in becoming employed in an occupation related to their high school vocational education program. This chapter describes the population, programs studied, data collection, instrument, data collection procedures, and the methods used for data analysis.

Population

The population surveyed included all graduates from twelve vocational education programs offered at the Mount Pleasant, Michigan, Area Center. In order to be designated an Area Center by the Michigan Department of Education, the school must offer a minimum of fifteen or more certified programs and serve a geographic region that has an enrollment of 12,000 or more students. In the case of the Mount Pleasant Area Center, it served a geographic region of two counties which had nine public school districts and one parochial school. The districts' enrollments ranged from 553 to 4,476. Most of the schools were in rural areas other than Mount Pleasant which has a population of 22,000 plus inhabitants. The students selected to attend the Area Center was left to the discretion of each local

district. The larger schools in the districts offered a variety of prevocational classes in business, industrial arts, home economics, and agriculture. The smaller schools offered only introductory home economics and, in some cases, agriculture. The students enrolled in vocational education programs at the Area Center had a wide variation in economic level and pre-preparation background. In the larger schools most students had two years of orientation or prevocational classes in different fields while in the smaller schools, students may have had no preparation at all. Seven of the twelve programs at the Center included 35 to 40 percent disadvantaged or handicapped students integrated into regular programs. All students were either eleventh or twelfth graders. This study includes 1,285 graduates from twelve programs offered at Mount Pleasant Area Center during the school years of 1971 to 1976 inclusive.

Programs Studied

The following programs that were in operation since 1971 were included in this study:

Forestry	Auto Mechanics
Distributive Education	Building Trades
Nurses Aide	Drafting
Child Care	Electronics
Food Service	Printing
Office Clerical	Machine Shop

Data Collection Instrument

The instrument used in the study for the first year was the Michigan Department of Education's Follow-up Survey of Graduates (see Appendix B). The third- and fifth-year instrument (see Appendix C) did not include the questions on racial-ethnic and sex information and who helped you to find a job. The instrument was developed by the Michigan Department of Education in the early 70's and was used throughout the State by all local program administrators since then. This data were used as a feedback mechanism so local data could be compared for program evaluation, program planning, and policy decision making. Its major thrust was to gather data from former students concerning employment and/or further education, the first, third and fifth year after graduation.

The determination of employment status provided an important baseline for the study. For the purpose of the research, employment status was divided into four major categories including employed in a related occupation, employed in an unrelated occupation, unavailable for employment, and unemployed. These categories allow personnel in the schools to assess the number of students who entered and remained in occupations related to their high school preparation, the number employed in unrelated occupations, the number seeking employment, and the number who were not available for employment.

Educational status was another critical component in the study. Again, it was divided into four major categories encompassing continued education in a related field, continued education in an

unrelated field, continued education on a full-time basis, and continued education on a part-time basis. Whether a person was employed or was furthering his/her education after graduation, educators were interested in how successful they were in obtaining employment and its relation to their previous training. The same was true for further education.

Three other indicators that provided some insight into career paths of graduates were military status, marital status, and location of employment or mobility over a five-year period. In addition, job location provided some assistance in determining the job market that was being assessed and the types of programs and experience the Center needed to provide to students still in school.

Data Collection Procedures

The Placement Coordinator at the Mount Pleasant Area Center distributed the follow-up questionnaire to all the vocational education graduates from certified vocational programs. The first-year follow-up from 1971 to 1976 was completed during November and December of the same year the students graduated from school or approximately six months after graduation. The third- and fifth-year follow-ups were sent out in late December. This time frame was selected since previous experience indicated the response rate was usually higher during that time of the year. That proved to be an inopportune time for graduates in the construction trades, because, depending on weather conditions, they quite often were laid off and reported unemployed on the questionnaire. In 1973 the follow-up time period

was changed to late March and early April. This had a positive impact on the number reporting that they were employed.

Concurrent with the follow-up questionnaire mailing, the Center, in concert with the local newspapers, radio and television stations disseminated articles and news releases on the importance of the follow-up study and encouraged assistance from parents and siblings. The mailings included a letter asking each graduate to respond, a return envelope stamped with a permit, and a questionnaire (see Appendix D). The mail out envelope had a corrected address requested box in the upper left hand corner. In the event the Center had the wrong address, the post office supplied the correct address when available.

Three weeks after the original mailing, a post card was mailed to all nonrespondents asking them to return the form. One week after the post card was mailed out, a telephone follow-up was undertaken for all nonrespondents who could be located. During the collection process all forms were recorded so nonrespondents could be contacted. Once the collection process was completed, the first-year forms were copied, edited and forwarded to the State Department of Education to be processed for their records. The information at the Center was compiled and analyzed for local decision making. In the third and fifth years, the same follow-up procedure was used. In this case, however, the data remained at the Center for local use and was not forwarded to the State Department of Education. The first few years all data were compiled by hand. In the later years,

after the acquisition of a computer, the data were computerized with each student's permanent school records.

Data Analysis

To perform the data analysis, the Michigan State University CDC6500 computer system was used. The data processing included sorting the master file into occupational education codes and using the Statistical Package for the Social Sciences (SPSS) for the analysis of the data. The computer was programmed for a career path analysis of each student for a one-, three-, and five-year response to each variable by program. Through the use of frequency distribution and cross tabulation each of the variables in the study were analyzed. This provided a composite tabulation of the data and formed the basis for answering the research questions regarding the graduates of the Mount Pleasant Area Center.

The Variables analyzed were employment relation to school program, post-high-school education of vocational education graduates, employment by sex, marital status, program completers, noncompleters, geographic location, military service, unemployment, high school grade point average of vocational education students, and high school English grades of vocational education students by program. The response rate for the various questions differed due to the fact that graduates followed different career paths, so they were included in the tables or narrative in Chapter IV.

Evaluation Model

The evaluation model was developed by creating a three-digit number with the first year representing the one-hundredths place, the third year the ten's place and the fifth year the one's place (1 3 5), while the variables under study generated a frequency distribution that transformed the raw data into a descriptive analysis of each graduate's career path.

CHAPTER IV

ANALYSIS OF THE DATA

The career patterns reported were for the twelve certified programs operating at the Mount Pleasant (Michigan) Area Vocational Center from 1971 to 1976. This chapter presents the findings of the study resulting from an analysis performed on the data collected from 1285 graduates. Percentage and frequency distribution were the statistical forms used in reporting the findings. In the descriptive portions of this chapter, the percentages were rounded to the nearest whole number. It should be pointed out that not all respondents answered each question on the follow-up form each year; consequently, some variations in response rate exist from one year to the next and also from one program to the next.

Placement and Unemployment of Vocational Education Graduates

Placement in a productive capacity was a goal of the vocational education programs under study. It was also a primary measure of success in the vocational education program. To determine how the Mount Pleasant Area Center graduates compared with graduates from other vocational education programs throughout the State, the placement records of the Mount Pleasant first year graduates over a five-year period was compared with the State of Michigan annual follow-up

of 1975 graduates (see Table 1). The data was divided into four major categories: (1) Employed; this included all graduates who were employed the first year after graduation; (2) Other; which included military service, homemaker and not available for employment; (3) Continued education; which included graduates attending post-high-school education; and (4) unemployed; or seeking work. How did the Mount Pleasant Area Center Vocational Education graduates compare in these four areas to the state average for Vocational Education graduates?

Employment of Graduates

The total employment average of Mount Pleasant graduates in the first year after graduation was 58 percent as compared to the State average of 55 percent. However, considerable variation existed between programs in regard to employment. The comparative data revealed that in the machine shop area Mount Pleasant had 84 percent employed; the State average was 61 percent. In the auto mechanics category Mount Pleasant had 67 percent employed; the State average was 49 percent. The nurses aide program at Mount Pleasant had 63 percent employed, and the State average was 44 percent. In the food service area Mount Pleasant had 64 percent employed, and the State average was 49 percent. In the child care program Mount Pleasant had 51 percent employed; the State average was 39 percent. In the building trades area, Mount Pleasant had 68 percent employed, the State average was 62 percent. In the electronics program, Mount Pleasant had 56 percent employed, and the State average was

TABLE 4.--Placement and Unemployment Comparison of the State of Michigan Annual Follow-Up of the 1975 Vocational Edsucation Graduates and the Longitudinal Follow-Up of First Year Vocational Education Graduates at the Mount Pleasant Area Center[a]

	Employed				Other				Cont. Education				Unemployed			
	M.P.		State		M.P.		State		M.P.		State		M.P.		State	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Child Care	40	51	194	39	8	10	153	31	17	22	38	6	14	17	118	24
Auto Mechanics	96	67	1334	49	18	13	516	30	16	11	3	3	14	10	217	10
Building Trades	57	68	745	62	16	20	278	23	5	6	22	2	7	8	150	13
Clerical	86	44	376	46	47	24	269	33	49	25	55	7	14	7	119	15
Distributive Ed.	41	49	2044	52	11	13	1062	31	26	31	174	5	6	7	419	12
Nurses Aide	117	63	402	44	22	12	338	36	35	19	62	7	11	6	113	12
Printing	43	52	236	57	7	8	97	24	27	33	21	5	5	6	57	14
Forestry	51	57	23	55	13	15	12	24	21	24	3	6	4	4	7	15
Drafting	32	48	202	51	6	9	130	33	27	40	36	9	2	3	26	7
Machine Shop	63	84	473	61	14	18	167	26	5	6[b]	14	2	2	2	78	11
Electronics	44	56	118	47	11	14	93	37	27	34[c]	19	8	2	2	19	8
Food Service	74	64	403	49	9	8	238	30	22	28[d]	34	4	13	2	139	17
TOTAL	744	58	6550	55	182	14	3353	28	277	21	481	4	94	7	1462	12

[a]Michigan Department of Education, Continuing Education Placement Summary by Program Within State (Lansing: Form X0608, January 28, 1976); Michigan Department of Education, Vocational Education Job Placement Summary of Program Within State (Lansing: Form X0607, January 28, 1976).

[b]Five graduates in school and working.

[c]Seven graduates in school and working.

[d]Three graduates in school and working.

47 percent. Of the clerical graduates from Mount Pleasant, 45 percent were employed and the State average was 46 percent. In the distributive education category, Mount Pleasant had 49 percent employed and the State average was 52 percent. In the drafting area, Mount Pleasant had 48 percent employed and the State average was 51 percent. In the printing program, Mount Pleasant had 52 percent employed and the State average was 57 percent.

Other: Including Military Service, Homemaker and Not Available for Regular Employment

The total other category at Mount Pleasant included 14 percent of the graduates the first year after graduation compared to the State average of 28 percent. In this cohort, the State average was higher for all programs. In the child care area the State average was 31 percent; in Mount Pleasant it was 10 percent. In the nurses aide program, the State average was 36 percent; in Mount Pleasant it was 12 percent. The State average for the electronics respondents was 37 percent; at Mount Pleasant it was 14 percent. In the drafting area, the State had 33 percent in the other category and at the Mount Pleasant Center it was 9 percent. In the food service category the State average was 30 percent; while Mount Pleasant reported 8 percent. In the auto mechanics program, the State average was 30 percent and the Mount Pleasant Center had 18 percent. In the printing area the State average was 24 percent; at Mount Pleasant it was 8 percent. In the distributive education category, the State average was 31 percent; and 13 percent was recorded in the Mount

Pleasant Center. In the clerical area the State average was 33 percent and at the Mount Pleasant Center it was 24 percent. In the forestry program the State average was 24 percent while the Mount Pleasant Center had only 13 percent. In the machine shop area the State average was 26 percent and at the Mount Pleasant Center it was 18 percent. In the building trades program, the State average was 23 percent and in the Mount Pleasant Center it was 20 percent.

Placement in Continued Education

In continued education the data revealed a substantial difference between the State average graduates continuing in higher education and the Mount Pleasant Area Center. The overall average of the graduates continuing education in the State was 4 percent while at the Mount Pleasant Center 21 percent continued their education after high school graduation. Of the drafting graduates from the Mount Pleasant Center, 33 percent continued their education compared to 9 percent for the State. In the distributive education area 31 percent of the graduates from Mount Pleasant continued their education compared to 5 percent for the State. In the electronics programs 34 percent of the Mount Pleasant graduates continued in higher education compared to 8 percent for the State. In the printing category 33 percent of the Mount Pleasant graduates continued their education and 5 percent for the State. In the food service area 22 percent of the Mount Pleasant graduates continued their education and 4 percent for the State. In the forestry program 21 percent continued their education from the Mount Pleasant Center and 3 percent continued from the

State. In the clerical area 25 percent continued from the Mount Pleasant Center and 7 percent from the State. In the child care category 22 percent continued from Mount Pleasant and 6 percent from the State. In the auto mechanics program, 11 percent continued their education from the Mount Pleasant Center and 3 percent from the State. In the building trades and machine shop programs, 5 percent from the Mount Pleasant Center continued their education and 2 percent from the State.

Unemployment of Graduates

The average unemployment of graduates from the Mount Pleasant Area Center was lower than the average for the state. The average unemployment for the Mount Pleasant Center was 7 percent while the State average was 12 percent. Considerable variation existed between individual programs. At the Mount Pleasant Area Center the unemployment for the child care area was 17 percent; the State average was 24 percent. In the auto mechanics category the unemployment average was 10 percent for the Mount Pleasant Center and the same for the State. In the building trades program, it was 8 percent at the Mount Pleasant Center and 13 percent for the State. In the distributive education area the average was 7 percent at the Mount Pleasant Center and 15 percent in the State. In the nurses aide area, 6 percent were unemployed at Mount Pleasant and 12 percent in the State. In the printing category, the average was 6 percent for the Mount Pleasant Center and 14 percent in the State. In the forestry program, the average was 4 percent for the Mount Pleasant Center and 15 percent in

the State. In the drafting area 3 percent for the Mount Pleasant Center and 7 percent in the State. In the machine shop category the average was 2 percent in the Mount Pleasant Center and 11 percent for the State. In the electronics program, 2 percent were unemployed for the Mount Pleasant Center and 8 percent for the State. In the food service area, the average was 2 percent for the Mount Pleasant Center and 17 percent for the State.

Employment of Vocational Education Graduates

The data collected concerning the employment of vocational education graduates were grouped under three major categories, full-time employed, part-time employed and not available for employment. The longitudinal data base revealed several pertinent findings, the effect of time on the employment of graduates by program and the effect marital status had on employment of graduates. The graduate response for the first year follow up was 83 percent, the graduate response rate the third year was 80 percent and the graduate response rate for the fifth year was 43 percent.

The Effect of Time on the Employment of Graduates from the Mount Pleasant Area Vocational Center

The first-year follow-up revealed that 57 percent of the graduates were employed full time, three years later 70 percent were employed full time and five years later 74 percent were employed full time (see Table 5). In part-time employment the first year 14 percent of the total graduates worked part time, three years later

10 percent and five years later 7 percent. In the category of not available for employment the first year 29 percent of the graduates classified themselves in this group. The third year 20 percent were not available for employment and the fifth year 19 percent. In analyzing the data by program for full-time employment forestry had 55 percent employed the first year, 74 percent the third year and 88 percent the fifth year after graduation. The distributive education area had 44 percent employed full time the first year, 73 percent the third year and 80 percent the fifth year. The nurses aide category had 55 percent employed full time the first year, 62 percent the third year and 70 percent the fifth year. The child care program had 51 percent employed full time the first year, 49 percent the third year and 55 percent the fifth year. The food service area had 51 percent employed full time the first year, 65 percent the third year and 69 percent the fifth year. In the clerical area, 47 percent of the respondents were employed full time the first year, 65 percent the third year and 67 percent the fifth year. In the auto mechanics category 73 percent were employed full time the first year, 83 percent the third year and 82 percent the fifth year. The building trades area had 79 percent employed full time the first year, 84 percent the third year and 92 percent the fifth year. In the drafting category 39 percent of the respondents were employed full time the first year, 64 percent the third year and 63 percent the fifth year. The electronics program had 57 percent employed full time the first year, 66 percent the third year and 82 percent

the fifth year. The printing area had 41 percent employed full time the first year, 69 percent the third year and 63 percent the fifth year. In the machine shop area, 87 percent were employed full time the first year, 85 percent the third year and 93 percent the fifth year.

Part-time employment varied from program to program, and in most programs it declined from 20 to 50 percent by the third year and overall to 7 percent the fifth year.

In combining full-time and part-time employment for the fifth year, the following percentages of employment by program were revealed: the forestry program had 97 percent employed; the distributive education area had 91 percent employed; the nurses aide category had 73 percent employed; in the child care area 69 percent were employed; in the food service category, 80 percent were employed; the clerical program had 74 percent employed; the auto mechanics category revealed 85 percent employed; in the building trades area 92 percent were employed; the drafting program had 65 percent employed; the electronics category had 86 percent employed; in the printing programs, 79 percent of the respondents were employed; and in the machine shop area 93 percent were employed.

Graduates not available for employment began with 29 percent of the total graduates in the first year and declined to 20 percent the third year and to 19 percent the fifth year. The third and fifth years it stabilized and consisted primarily of those graduates who were in the military service, in school, or women who married and withdrew from employment.

TABLE 5.--A One-, Three-, and Five-Year Comparison of the Vocational Education Graduates That Were Employed Full Time, Part Time and Not Available for Employment

Program	First Year							Third Year							Fifth Year						
	Full Time		Part Time		NEMPL		Total	Full Time		Part Time		NEMPL		Total	Full Time		Part Time		NEMPL		Total
	N	%	N	%	N	%	N	N	%	N	%	N	%	N	N	%	N	%	N	%	N
Forestry	42	55	9	12	25	33	76	53	74	6	8	13	18	72	28	88	3	9	1	3	32
Distributive Education	28	44	13	21	22	35	63	53	73	4	5	16	22	73	28	80	4	11	3	9	35
Nurse Aide	92	55	25	15	50	30	167	89	62	14	10	40	28	143	46	70	2	3	18	27	66
Child Care	33	51	7	11	25	38	65	26	49	8	15	19	36	53	16	55	4	14	9	31	29
Food Service	51	52	23	23	24	25	98	65	65	15	15	20	20	100	44	69	7	11	13	20	64
Clerical	63	47	23	17	49	36	135	100	65	23	15	31	20	154	68	67	7	7	26	26	101
Auto Mechanics	85	73	11	9.4	21	18	117	90	83	7	7	11	10	108	58	82	2	3	11	15	71
Building Trades	55	79	2	3	13	18	70	63	84	2	3	10	13	75	24	92	0	0	2	8	26
Drafting	21	39	11	20	22	41	54	34	64	7	13	12	23	53	17	63	1	4	9	33	27
Electronic	35	57	9	14	18	29	62	43	66	5	8	17	26	65	23	82	1	4	4	14	28
Printing	30	41	13	18	30	41	73	42	69	10	16	9	15	61	27	63	7	16	9	21	43
Machine Shop	61	78	5	7	4	6	70	60	85	3	4	8	11	71	38	93	0	0	3	7	41
TOTAL	596	57	151	14	303	29	1050	718	70	104	10	206	20	1028	417	74	38	7	108	19	563

The Affect of Marital States on the Employment of Vocational Education Graduates of the Mount Pleasant Area Center

The response rate for the first- and third-year follow-ups of the employed graduates as to their marital status was 97 percent.

The first-year follow-up revealed that 57 percent of both the single and married graduates were employed full time (see Table 6). In the third year the percentage of singles employed on a full-time basis increased to 73 percent and the married graduates employed full time increased to 66 percent. In the fifth year, the percentage of singles employed full time increased to 77 percent and the married employed remained at 66 percent.

Part-time employment during the first year was 15 percent for both the single and married graduates. The single part-time employment dropped to 8 percent the third year and remained at that level during the fifth year. Part-time employment of graduates declined more slowly for the married group to 11 percent the third year and to 8 percent the fifth year. In the unavailable for employment category, the single group continued to decline from 28 percent the first year to 15 percent the fifth year, while for the married group it declined from 28 to 26 percent over the five-year period.

Job Relatedness

There were five factors studied to determine the impact of job relatedness to previous training at the Mount Pleasant Area Center. The data related to these groupings were reported under the

TABLE 6.--A One-, Three-, and Five-Year Marital Status Comparison of the Full-Time and Part-Time Employed and Not Available for Employment Graduates of the Area Center

	First Year							Third Year							Fifth Year						
	Full Time		Part Time		NEMPL		Total	Full Time		Part Time		NEMPL		Total	Full Time		Part Time		NEMPL		Total
	N	%	N	%	N	%	N	N	%	N	%	N	%	N	N	%	N	%	N	%	N
Single	457	57	117	15	232	28	806	537	73	58	8	144	19	739	260	77	28	8	49	15	337
Married	127	57	34	15	62	28	223	166	66	27	11	59	23	252	146	66	17	8	57	26	220

headings of, a comparison of the employed vocational education graduates by vocational education programs that were employed in a related occupation, a comparison of employed vocational education graduates completing a vocational program and employed vocational education graduates not completing a vocational education program at the Mount Pleasant Area Center and their entry into a related occupation, a comparison of related employment by male and female employed graduates of the Mount Pleasant Area Center, a longitudinal comparison of related employment of male and female employed graduates of the Mount Pleasant Area Center, a programatic longitudinal comparison of vocational education graduates that were employed in an occupation related to their training at the Mount Pleasant Area Center.

Employed Graduates in a Related Occupation

The response rate to, "Are you employed in an occupation that was related to your previous training?" was 69 percent for the first-year follow-up, 55 percent for the third-year follow-up and 34 percent for the fifth-year follow-up.

Overall, related employment for the first year was 54 percent of the graduates in a related occupation to their previous training, the third year, 56 percent were in a related occupation and the fifth year, 55 percent were in a related occupation. However, a considerable variation existed between programs in regard to related employment (see Table 7). Clerical, auto mechanics, building trades, electronics, printing and machine shop had a continuous increase in related employment over a five-year period. The first year after

TABLE 7.--A One-, Three-, and Five-Year Comparison of the Employed Vocational Education Graduates by Vocational Education Program That Were Employed in a Related Occupation

Program	First Year					Third Year					Fifth Year					Response Rate		
	REL		NREL		Total	REL		NREL		Total	REL		NREL		Total	First Year	Third Year	Fifth Year
	N	%	N	%	N	N	%	N	%	N	N	%	N	%	N			
Forestry	15	26	42	74	57	11	24	34	76	45	3	12	22	88	25	64	57	32
Distributive Education	41	69	18	31	59	30	56	23	44	53	16	53	14	47	30	70	63	36
Nurse Aide	97	82	22	18	119	73	70	31	30	104	38	72	15	28	53	64	56	29
Child Care	24	52	22	48	46	15	58	11	42	26	9	50	9	50	18	58	34	34
Food Service	42	49	44	51	86	26	40	39	60	65	15	33	31	67	46	75	57	40
Clerical	86	65	47	35	133	105	72	39	28	144	60	81	14	19	74	68	74	38
Auto Mechanics	52	47	59	53	111	46	58	34	42	80	31	51	30	49	61	77	56	42
Building Trades	33	51	32	49	65	25	53	22	47	47	16	59	11	41	27	76	55	32
Drafting	13	28	34	72	47	15	43	20	57	35	5	29	12	71	17	70	52	25
Electronic	20	42	28	58	48	15	41	22	59	37	13	57	10	43	23	61	47	29
Printing	25	42	35	58	60	16	34	31	66	47	13	41	19	60	32	73	57	39
Machine Shop	29	49	30	51	59	32	64	18	36	50	22	65	14	35	36	75	63	46
TOTAL	477	54	413	46	890	409	56	324	44	733	241	55	201	45	442	69	55	34

NOTE: REL--Related to training at the Area Center

NREL--Not related to the training at the Area Center

graduation, the clerical group had a 65 percent employment rate in related occupations; the third year 72 percent and the fifth year 81 percent. The auto mechanics area had 47 percent of the respondents in a related occupation the first year, 58 percent the third year and 51 percent the fifth year. The building trades category had 51 percent in related employment the first year, 53 percent the third year and 59 percent the fifth year. Electronics had 42 percent employed in a related occupation the first year, 41 percent the third year and 57 percent the fifth year. The machine shop group had 49 percent employed in related occupations the first year, 64 percent the third year and 65 percent the fifth year. Related employment in the child care, drafting and printing programs did not vary too much over the five-year period. The child care program had 52 percent employed in a related occupation the first year, 58 percent the third year and 50 percent the fifth year. In the drafting category, 28 percent of the respondents were employed in a related occupation the first year, 43 percent in the third year and 29 percent the fifth year. The printing group had a 42 percent employment rate the first year, 34 percent the third year and 41 percent the fifth year.

Four programs had a decline in related employment over the five-year period, food service, distributive education, nurses aide and forestry. The related employment in the nurses aide area declined from 82 percent the first year to 72 percent the fifth year. The related employment delcined from 26 percent the first year to

12 percent the fifth year in the forestry area. In the distributive education category, related employment declined from 69 percent the first year to 53 percent the fifth year and in the food service area, it declined from 49 percent the first year to 33 percent the fifth year.

Employed Vocational Education Graduates Completing a Vocational Education Program and Employed Vocational Education Graduates not Completing a Vocational Education Program and Their Entry into a Related Occupation

In answer to the question, "Were program completers more apt to enter a related occupation than noncompleters?" the data revealed that program completers had a higher percentage in related employment (see Table 8). Of the graduates who completed a vocational education program, the first year after graduation, 74 percent were employed in a related occupation as compared to 26 percent of the graduates who did not complete a vocational education program. The third year, 77 percent of the completers were in a related occupation and 23 percent of the noncompleters; the fifth year, 74 percent of the completers were in a related occupation and 26 percent of the noncompleters. The employment of the completers continued to decline in the nonrelated area, 71 percent the first year to 66 percent the fifth year, while the employment for noncompleters continued to increase in the nonrelated occupations from 29 percent to 35 percent.

TABLE 8.--A One-, Three-, and Five-Year Comparison of Employed Vocational Education Graduates Completing a Vocational Program and Employed Vocational Education Graduates Not Completing a Vocational Program at the Mount Pleasant Area Center and Their Entry into Related or Non-Related Employment

	First Year					Third Year					Fifth Year				
	COMP		NCOMP		Total	COMP		NCOMP		Total	COMP		NCOMP		Total
	N	%	N	%		N	%	N	%		N	%	N	%	
Related	353	74	121	26	474	294	77	86	23	360	177	74	62	26	239
Not Related	286	71	115	29	401	232	72	90	28	322	131	66	59	35	200
TOTAL	639	73	236	27	875	526	75	176	25	702	308	70	131	30	439

NOTE: COMP--Graduate completed the training at Area Center

NCOMP--Graduate did not complete the training at the Area Center

A Comparison of Male and Female Employment in Related Occupations

In response to the question, "Are males or females more apt to enter a related occupation?" the study revealed that more females than males were in related occupations (see Table 9). The first year after grauation, 43 percent of the males were employed in a related occupation and 58 percent of the females. The third year 45 percent of the males were in a related occupation and 64 percent of the females, and the fifth year 44 percent of the males were in a related occupation and 69 percent of the females.

Unduplicated Longitudinal Comparison of Related Employment of Male and Female Graduates

In analyzing the career paths of the graduates of the Mount Pleasant Area Center, the data revealed that 64 percent of the total graduates were employed in a related occupation during their first five years and 36 percent were in a non-related occupation (see Table 10). The data also indicated that 76 percent of the female graduates were employed in a related occupation compared to 55 percent of the males.

Programatic Longitudinal Comparison of Vocational Education Graduates Who Were Employed in an Occupation Related to Their Training

In support of the question, "Do vocational education graduates enter employment related to their educational program pursued at the Area Vocational Center?" an unduplicated analysis revealed that in

TABLE 9.--A One-, Three-, and Five-Year Comparison of Related Employment by Male and Female Employed Graduates at the Mount Pleasant Area Center

	First Year					Third Year					Fifth Year				
	REL		NREL		Total	REL		NREL		Total	REL		NREL		Total
	N	%	N	%	N	N	%	N	%	N	N	%	N	%	N
Male	219	43	292	57	511	180	45	217	55	397	116	44	145	56	261
Female	259	58	187	42	446	203	64	112	36	315	125	69	56	31	181
Total	478	50	479	50	957	383	54	329	46	712	241	54	201	46	447

NOTE: REL--Job is related to training at Area Center

NREL--Job is not related to training at the Area Center

TABLE 10.--An Unduplicated Longitudinal Comparison of Related Employment of Male and Female Graduates of the Mount Pleasant Area Center

	Related Employment		Non-Related Employment		Total
	No.	%	No.	%	No.
Male	325	55	264	45	589
Female	358	76	115	24	473
Total	783	64	379	36	1062

most programs employment in related occupations continued to increase (see Table 11). The response rate of the graduates to the question varied from 70 to 89 percent. The overall percentage was 64 percent in related employment and 36 percent in the unrelated employment category. However, there was considerable variation between programs. In the nurses aide and clerical programs, 78 percent were in related employment compared to 28 percent in non-related. In the distributive education area, 75 percent were in related occupations compared to 25 percent in non-related. In the machine shop category, 74 percent of the respondents were in related occupations compared to 26 percent in non-related; in the building trades area, 70 percent were in related occupations compared to 30 percent non-related occupations. In the auto mechanics program, 66 percent were in related occupations compared to 34 percent in non-related. In the child care area, 62 percent were in related occupations compared to 38 percent in non-related. In the food service category, 57 percent were in related

TABLE 11.--A Programatic Longitudinal Comparison of Vocational Education Graduates That Were Employed in an Occupation Related to Their Training at the Mount Pleasant Area Center

Program	Related		Nonrelated		Total No.	Response Rate Percent
	No.	%	No.	%		
Nurses Aide	120	78	33	22	153	83
Clerical	130	78	37	22	167	85
Distributive Education	55	75	18	25	73	87
Machine Shop	50	74	18	26	68	86
Building Trades	47	70	20	30	67	79
Auto Mechanics	85	66	43	34	128	89
Child Care	34	62	21	38	55	70
Food Service	56	57	42	43	98	85
Electronics	31	51	30	49	61	77
Printing	31	46	37	54	68	83
Drafting	23	42	32	64	55	82
Forestry	22	31	48	69	70	79
TOTAL	684	64	379	36	1063	

occupations compared to 43 percent in non-related. In the electronics area, 51 percent were in related occupations compared to 49 percent in non-related; and the printing program had 46 percent in related occupations compared to 54 percent in non-related. In the drafting area, 42 percent were in related occupations, and 64 percent were in non-related occupations. The forestry category had 31 percent in related employment compared to 69 percent in non-related employment.

Vocational Education Graduates Continuing Their Education

In response to the question, "Did the graduates continue their education after high school completion?" the study revealed that the first year 21 percent of the graduates were continuing in higher education on a full-time basis, the third year 9 percent were continuing and the fifth year 4 percent continued (see Table 12). Continuing in higher education on a part-time basis the first year were 13 percent, the third year 11 percent and the fifth year 9 percent. However, the percentage of graduates continuing in higher education on a full-time basis varied considerably by program. In drafting, for example, the first year after graduation 37 percent continued their education, in the third year it was 18 percent and in the fifth year 9 percent. In electronics, the first year 34 percent continued their education, 19 percent the third year and 4 percent the fifth year. In the printing area, the first year 33 percent of the respondents continued in higher education, 13 percent the third

TABLE 12.--A One-, Three-, and Five-Year Comparison of the Mount Pleasant Area Center Vocational Education Graduates That Continued in Higher Education on a Full-Time or Part-Time Basis

Program	Total Grads.	First Year				Third Year				Fifth Year			
		Full Time		Part Time		Full Time		Part Time		Full Time		Part Time	
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Drafting	67	25	37	1	2	12	18	0	0	6	9	0	0
Electronics	79	27	34	0	0	15	19	2	3	3	4	0	0
Printing	82	27	33	0	0	11	13	2	3	6	7	0	0
Distributive Education	84	26	31	0	0	8	10	1	1	1	1	0	0
Clerical	196	47	24	1	.5	21	11	0	0	9	5	0	0
Forestry	89	21	24	0	0	5	6	1	1	3	3	1	1
Food Service	115	22	19	2	2	9	8	1	1	9	8	2	2
Child Care	79	14	18	3	4	7	9	0	0	1	1	1	1
Nurses Aide	185	32	17	3	2	18	10	4	2	3	2	4	2
Auto Mechanics	144	23	16	0	0	5	4	0	0	2	2	0	0
Machine Shop	79	5	6	2	3	1	1	0	0	3	4	0	0
Building Trades	85	4	5	1	1	3	4	0	0	1	1	1	1
TOTAL	1285	273	21	13	1	115	9	11	1	47	4	9	.7

year and 7 percent the fifth year of the respondents continued in higher education. The distributive education group had 31 percent enrolled in full-time higher education the first year, 10 percent the third year and 1 percent the fifth year. The forestry and clerical programs had 24 percent enrolled in higher education on a full-time basis the first year, 6 and 11 percent the third year and 3 and 5 percent the fifth year. The food service category had 19 percent enrolled in higher education the first year, 8 percent the third and 8 percent the fifth year. The child care program had 18 percent in higher education on a full-time basis the first year, 9 percent the third year and 1 percent the fifth year. The nurses aide area had 17 percent in higher education on a full-time basis the first year, 10 percent the third year and 2 percent the fifth year. In the auto mechanics program 16 percent were enrolled in higher education on a full-time basis the first year, 4 percent the third year and 2 percent the fifth year. The machine shop group had 6 percent enrolled in full-time continued education the first year, 1 percent the third year and 4 percent the fifth year. The building trades category respondents had 5 percent enrolled in higher education the first year, 4 percent the third year and 1 percent the fifth year.

The part-time enrollment in higher education was low with 1 percent of the graduates continuing their education the first and third years and .7 percent the fifth year. Between programs there was a variation of 0 to 4 percent with the child care program having

the biggest response rate in part-time higher education showing 4 percent.

TABLE 13.--Unduplicated Count of Mount Pleasant Area Center Vocational Education Graduates that Continued in Higher Education

Total Graduates	Graduates in School Full Time		Graduates in School Part Time	
No.	No.	%	No.	%
1285	344	27	20	2

Combining the full-time and part-time students, 29 percent of the graduates continued their education beyond high school.

Continued Education by Program Completers and Noncompleters

In response to the question, "Is the percentage of vocational education graduates continuing post-high-school education higher for program completers than noncompleters?" it was found that of the total students that continued their education the first year after graduation 68 percent were graduates that had completed a vocational program compared to 32 percent that had not completed their vocational program. The third year 69 percent of the completers were in continued education compared to 32 percent of the noncompleters. The fifth year 74 percent of the completers continued in higher education and 26 percent of the noncompleters. In comparing continued education between completers and noncompleters, of the graduates that completed

TABLE 14.--A One-, Three-, and Five-Year Comparison of Continued Education by Vocational Education Graduates That Completed a Vocational Program and Graduates Who Did Not Complete a Vocational Program at the Mount Pleasant Area Center

	First Year					Third Year					Fifth Year				
	COMP		NCOMP		TOTAL	COMP		NCOMP		TOTAL	COMP		NCOMP		TOTAL
	N	%	N	%	N	N	%	N	%	N	N	%	N	%	N
Full Time	187	70	82	30	269	85	70	36	30	121	34	76	11	24	45
Part Time	6	43	8	57	14	6	55	5	45	11	12	71	5	29	17
TOTAL	193	68	90	32	283	91	69	41	32	132	46	74	16	26	62

NOTE: COMP--Graduate completed the training at Area Center

NCOMP--Graduate did not complete the training at the Area Center

their high school vocational program, 70 percent continued full time in higher education compared to 30 percent of the graduates who had not completed their high school vocational program.

Mobility of Vocational Education Graduates

There are a number of items that could effect geographic choices of graduates. Did the majority of vocational education graduates remain in the local community? Did geographic location have an impact on related employment? Did vocational graduates decide to enter the military service? To provide answers to these questions the following areas were studied: geographic location of vocational graduates by programs, vocational graduates employed in related occupations by geographic location, and vocational graduates entering the military service.

Three major categories were used to describe the location of graduates: (1) the boundaries of the Intermediate School District or Isabella and Gratiot counties, which the Mount Pleasant Area Center serves, (2) region, which includes the counties bordering Isabella and Gratiot counties and (3) the balance of the state.

Geographic Location of Vocational Graduates by Program

The first year after graduation 76 percent of the vocational graduates were located in Isabella and Gratiot counties. The third year 73 percent remained in the local community and the fifth year 70 percent were in the local community. Migrating to the region the first and third years were 5 percent of the graduates and the fifth

year 12 percent of the graduates. Vocational graduates that moved out state the first year numbered 19 percent, 23 percent the third year and 18 percent the fifth year.

A year after graduation, 80 to 89 percent of vocational graduates in the nurses aide, child care, and clerical areas remained in Isabella and Gratiot counties or their local community (see Table 15). In the printing, forestry, food service, auto mechanics, and building trades categories, 72 to 79 percent were in Isabella and Gratiot counties. In the drafting, electronics, and machine shop programs, 53 to 64 percent remained in Isabella and Gratiot counties. The number of vocational education graduates located in the region was low with the drafting, electronics, and machine shop program graduates at 8 percent, distributive education group at 11 percent, and from 0 to 7 percent of the vocational graduates from the remaining programs. Seven of the twelve programs had 20 to 32 percent located in the state and the other five programs ranged from 5 to 17 percent. By the third year, the distributive education, nurses aide and clerical programs has more than 80 percent in Isabella and Gratiot counties. In the forestry, child care, auto mechanics and building trades categories, the percentages declined in Isabella and Gratiot counties by approximately 10 percent, while the machine shop and printing programs increased by 10 percent over the first year. The vocational education graduates in the region remained stable at 2 to 7 percent. Meanwhile, the out migration to the state increased for all programs except the distributive education and printing programs where they returned to the local community, and the food service and

TABLE 15.--A One-, Three-, and Five-Year Comparison of Geographic Location of Vocational Education Graduates from the Mount Pleasant Area Center

Program	First Year							Third Year							Fifth Year						
	Isabella Gratiot		Region		State		Total	Isabella Gratiot		Region		State		Total	Isabella Gratiot		Region		State		Total
	N	%	N	%	N	%	N	N	%	N	%	N	%	N	N	%	N	%	N	%	N
Forestry	53	73	2	2.7	19	25.3	74	39	64	2	3	20	33	61	21	68	1	3	9	29	31
Distributive Education	58	79	8	11	7	10	73	45	82	3	5	7	13	55	22	71	1	3	8	26	31
Nurse Aide	124	80	4	3	27	17	155	97	80	4	3	20	17	121	41	79	3	6	8	15	52
Child Care	48	81	3	5	8	14	59	26	76	2	6	6	18	34	39	64	2	3	20	33	61
Food Service	78	75	4	4	22	21	104	65	73	4	4	20	23	89	33	73	2	5	10	22	45
Clerical	130	89	9	6	7	5	146	106	80	6	4	21	16	133	60	77	6	8	12	15	78
Auto Mechanics	103	78	8	6	21	16	132	65	71	4	4	23	25	92	29	67	4	9	10	24	43
Building Trades	59	79	0	0	16	21	75	36	67	4	7	14	26	54	18	40	18	40	9	20	45
Drafting	38	60	5	8	20	32	63	29	62	1	2	17	36	47	15	80	0	0	4	20	19
Electronics	34	53	5	8	25	39	64	33	56	2	3	24	41	59	17	68	1	.4	7	28	25
Printing	55	72	5	7	16	21	76	48	81	3	5	8	14	59	24	80	0	0	6	20	30
Machine Shop	38	64	5	8	16	27	59	48	74	1	2	16	25	65	30	88	1	3	3	9	34
TOTAL	818	76	58	5	204	19	1080	637	73	36	4	196	23	869	326	70	54	12	88	18	468

nurses aide areas had little change. In the fifth year, the child care and building trades categories had over 60 percent of the vocational education graduates migrate away from the local community into the out-state area.

Related Employment to Geographic Location

In response to the question, Did geographic location have an impact on related employment, the data revealed that the first year after graduation, 55 percent of the total vocational education graduates were in related employment, compared to 56 percent the third year and 54 percent the fifth year (see Table 16). For the vocational education graduates remaining in Isabella and Gratiot counties the response rate remained at 55 percent for the five-year period. For the vocational education graduates that moved to the region the first year, 44 percent of the respondents were in related employment. In the third year 62 percent of the respondents were in the related employment category and the fifth year 44 percent. The vocational education graduates that migrated to the balance of the state had a higher percentage in related occupations--62 percent the first year, 58 percent the third year and 52 percent the fifth year.

Graduates Entering the Military Service

Since military service was also an option for vocational education graduates, a study was made to see what percentage of the graduates entered the military service by program (see Table 17).

TABLE 16.--Related Employment Comparison of the Mount Pleasant Area Center Vocational Education Graduates and Geographic Location One, Three, and Five Years Later

Location	First Year Follow-Up					Third Year Follow-Up					Fifth Year Follow-Up				
	REL		NREL		Total	REL		NREL		Total	REL		NREL		Total
	N	%	N	%	N	N	%	N	%	N	N	%	N	%	N
Isabella	358	55	300	45	658	234	55	194	45	428	171	55	139	45	310
Gratiot															
Region	11	44	14	56	25	13	62	8	38	21	7	44	9	56	16
State	68	61	43	39	111	49	58	35	42	84	32	52	30	48	62
TOTAL	437	55	357	45	794	296	56	237	44	533	210	54	178	46	388

Note: REL--Related to the training in Area Center

NREL--Not related to the training in Area Center

TABLE 17.--Comparison of Participation in the Military Service by Graduates of the Mount Pleasant Area Center Vocational Education Programs

Program	Total Graduates No.	First Year		Third Year		Fifth Year	
		No.	%	No.	%	No.	%
Machine Shop	79	14	18	9	11	6	8
Forestry	89	12	13	14	16	2	2
Building Trades	85	12	14	13	15	2	2
Electronics	79	11	14	11	14	5	6
Auto Mechanics	144	19	7	11	8	4	3
Food Service	114	9	8	11	10	4	4
Drafting	67	3	5	3	5	1	2
Printing	82	3	4	5	6	1	1
Distributive Education	84	3	4	1	1	1	1
Child Care	79	1	1	2	3	0	0
Nurses Aide	185	1	.5	2	1	1	.5
Clerical	196	0	0	1	.5	0	0
TOTAL	1285	79	6	83	6	27	2

The first year after graduation, 6 percent of the total vocational education graduates had entered the military service, the third year 6 percent of the respondents had entered military service and the fifth year the number declined to 2 percent of the total vocational education graduates. The forestry, electronics, building trades and machine shop programs had 13 to 18 percent of the vocational education graduates in the military service after the first year. The printing, drafting, distributive education, auto mechanics and food service areas had 4 to 8 percent of the vocational education graduates in the military service. In the third year, only the forestry, food service and auto mechanics programs had an increase in the number of vocational education graduates in military service. All other programs continued to decline. The fifth year the machine shop program was the only program with 8 percent of the vocational education graduates in the military service.

Scholastic Grades of Vocational Education Graduates

Considerable attention was generally placed on high school grades, both overall grade point average and academic grades by both general educators and vocational educators, as well as parents. Two questions became a concern, (1) Is there a difference in overall high school grade point average attained by graduates of different vocational education programs? (2) Is there a difference in English grades earned by students in different vocational education programs? To respond to the first question, the overall grade point averages

of only the Mount Pleasant high school vocational education graduates were analyzed. In response to the second question, the accumulated grade point average earned by vocational education graduates of Mount Pleasant High School in English were analyzed. The overall grade point average is scored on the basis of 4.00 is an "A" grade, 3.00 is a "B" grade, 2.00 is a "C" grade, and 1.00 is a "D" grade.

In analyzing the overall grade point average for the vocational education graduates, none of the vocational graduates had a 4.00 point or "A" average. Of the total vocational education graduates, 17 percent had a 3.00 or "B" average, 67 percent had a 2.00 or "C" average, and 16 percent had a 1.00 or "D" average (see Table 18). However, between programs a considerable variation existed. In the drafting program, 35 percent of the graduates had a 3.00 point or "B" average as compared to the clerical program with 28 percent of the graduates with a 3.00 point average, the electronics program had 24 percent, the distributive education program had 23 percent, the food service area had 20 percent, the nurses aide and printing areas had 14 percent with a 3.00 point or "B" average, the child care program had 11 percent with a 3.00 point average, the forestry category had 10 percent of the respondents with a 3.00 point average, the auto mechanics and building trades areas had 8 percent with a 3.00 point average and the machine shop program had 3 percent of the respondents with a 3.00 point average.

TABLE 18.--Overall High School Grade Point Average of the Mount Pleasant High School Vocational Education Graduates That Attended the Area Vocational Center by Program

Program	Grade Point						Total No.
	B 3.00		C 2.00		D 1.00		
	No.	%	No.	%	No.	%	
Drafting	17	35	27	56	4	9	48
Clerical	41	28	96	67	7	5	144
Electronics	17	24	47	66	7	10	71
Distributive Education	19	23	54	64	11	13	84
Food Service	23	20	78	68	14	12	115
Nurses Aide	20	14	98	70	22	16	140
Printing	11	14	56	70	13	16	80
Auto Mechanics	10	8	84	69	28	23	122
Child Care	7	11	35	56	22	34	64
Forestry	7	10	48	68	16	22	71
Building Trades	5	8	37	63	17	29	59
Machine Shop	2	3	48	83	8	14	58
TOTAL	179	17	708	67	169	16	1056

The major portion of the vocational education graduates were in the "C" grade or 2.00 point average. For all programs, they comprised from 56 to 70 percent of all the graduates.

Four vocational programs had the major share of the students with a 1.00 point or "D" average, the forestry program with 22 percent, the auto mechanics group with 23 percent, the building trades area with 29 percent and the child care program with 34 percent with a 1.00 grade point average. The clerical program had the least graduates with a 1.00 point average, namely 5 percent. The other programs ranged from 9 to 16 percent of their graduates with a 1.00 point average.

English Grades of the Mount Pleasant Vocational High School Graduates

English grades typically reflect reading and communication skills of students in high school. Therefore, they were used in this study to compare academic achievement for vocational education graduates. In the total distribution 2 percent of the vocational graduates had a 4.00 or "A" average in English, 30 percent of the vocational education graduates had a 3.00 or "B" average in English, 54 percent had a 2.00 or "C" average in English and 14 percent had a 1.00 or "D" average in English (see Table 19). The program analysis revealed that the clerical program had 53 percent, the drafting category had 52 percent, the distributive education group had 41 percent of the vocational graduates with a 3.00 or higher grade point average. The food service program had 34 percent, the nurses aide category had

TABLE 19.--English Grades of the Mount Pleasant High School Vocational Education Graduates That Attended the Area Vocational Center--by Program

Program	A		B		C		D		Total No.
	No.	%	No.	%	No.	%	No.	%	
Clerical	3	2	73	51	64	44	4	3	155
Drafting	4	8	21	44	17	35	6	13	48
Distributive Education	1	1	34	40	41	49	8	10	84
Food Service	3	3	36	31	62	54	14	12	115
Nurses Aide	6	4	40	29	84	60	10	7	140
Electronics	2	3	19	27	32	45	18	25	71
Printing	0	0	21	26	51	64	8	10	80
Child Care	0	0	15	23	34	53	15	23	64
Building Trades	0	0	13	22	32	54	14	24	59
Auto Mechanics	2	2	21	17	76	62	23	19	122
Forestry	0	0	14	20	43	60	14	20	71
Machine Shop	0	0	10	17	36	62	12	21	58
TOTAL	21	2	317	30	572	54	146	14	1056

32 percent and the electronics area had 31 percent of the respondents with a 3.00 or higher grade point average. All the other programs had from 17 to 26 percent with 3.00 grade average.

The drafting program had the lowest percentage of graduates in the 2.00 or "C" average grade point--35 percent. The clerical program had 44 percent, the electronics group had 45 percent, the distributive education area had 49 percent, the child care program had 53 percent, the building trades and food service categories had 54 percent, and all the other programs had from 60 to 64 percent of their graduates with a "C" average.

The highest percentage of "D" or 1.00 point grade average in English were in six programs, the electronics program had 25 percent, the building trades area had 24 percent, the child care program had 23 percent, the machine shop category had 21 percent, the forestry area had 20 percent and the auto mechanics program had 19 percent of the respondents with a grade point average of "D." All the other programs had 13 percent or less of their graduates with a 1.00 point or "D" grade average.

CHAPTER V

SUMMARY, CONCLUSIONS, RECOMMENDATIONS AND IMPLICATIONS FOR FURTHER RESEARCH

There have been numerous studies that have focused on the various aspects of vocational education graduate follow-up. Most of these were based on collecting data from graduates only once. Only limited attention has been focused on efforts to replicate these studies on the same population to confirm or contradict the initial findings.

In Chapter I, it was pointed out that this study was directed at a review and analysis of the various characteristics that affect graduates in progressing through their career patterns after graduation from high school. Seven major objectives were established.

1. To determine the extent to which selected student characteristics affect their occupational choice.
2. To determine the degree to which program graduates have continued their employment and/or educational preparation.
3. To determine the extent to which time had a relationship on the number of students employed in related occupational fields.

4. To determine the impact of geographic location on the related employment of program graduates.
5. To determine the extent to which a longitudinal model could be used to provide a data base for the evaluation of vocational education programs.
6. To determine the extent of consistency in related employment by programs.
7. To determine the employment/unemployment levels of graduates.

Each of the preceding chapters provided supporting data and findings related to the objectives. These findings were summarized in this chapter according to thirteen major research questions to provide a basis for the conclusions and recommendations. The statements listed in this section under conclusions were drawn from the findings and related to the specific objectives and supporting research questions. The recommendations suggest further use for the findings, while implications for further research were provided in the final section.

Summary of the Findings

The purpose of the study was to answer thirteen major questions to fulfill the stated objectives.

1. How did the Mount Pleasant Area Center longitudinal study of first year vocational education graduates compare to the State annual follow-up of first-year graduates in employment, other (not available for employment), continued education, and unemployment?

2. What effect did time have on the employment of vocational education graduates?

3. What effect did marital status have on the employment of vocational education graduates?

4. Was there a difference between the number of vocational education graduates who entered related employment upon graduation three and five years later?

5. Was the percentage of vocational education graduates employed in related occupations higher for program completers than for noncompleters?

6. Was the percentage of vocational education graduates employed in related occupations the same for male and female graduates?

7. Was there a difference between vocational education programs as to the number of vocational education graduates who pursued higher education?

8. Was the percentage of vocational education graduates continuing post-high-school education higher for program completers than for noncompleters?

9. Did the majority of vocational education graduates remain in the local community?

10. Did the geographic location have an impact on related employment of vocational education graduates?

11. What percentage of the vocational education graduates entered military service, by vocational education program?

12. Was there a difference in overall high school grade point average attained by vocational education graduates in different vocational education programs?

13. Was there a difference in English grades earned by vocational education graduates in different vocational education programs?

The data which formed the basis to answer these questions were obtained from survey instruments sent to vocational education graduates from the Mount Pleasant Area Center the first year after graduation, three years after graduation and five years after graduation.

The data collected were analyzed through the use of the Statistical Package for the Social Sciences computer program. With the use of percentage and frequency distribution analysis, the variables in the study were analyzed and grouped around each of the thirteen major questions.

Question 1

Question 1 stated: How did the Mount Pleasant Area Center longitudinal study of first-year vocational education graduates compare to the state annual follow-up of first-year graduates in employment, other (not available for employment), continued education, and unemployment? This study revealed that the graduates of the Mount Pleasant Center had 3 percent more graduates employed the first year than the State average. However, by analyzing the data on a program basis, a substantial difference was noted for some programs. In

child care, Mount Pleasant had 51 percent employed compared to the State average of 39 percent. In machine shop, Mount Pleasant had 84 percent employed while the State average was 61 percent. In auto mechanics and nurses aide, the Mount Pleasant Center had 19 percent more graduates employed than the State average, and in food service Mount Pleasant had 15 percent more graduates employed. In all other programs, the employment of graduates was higher for Mount Pleasant than the State from 5 to 9 percent except in clerical, distributive education and drafting where the State average was 3 percent higher than the average at Mount Pleasant.

In the category of other, which included homemakers, military service and not available for employment, the State average of 28 percent was 50 percent higher than the Mount Pleasant average of 14 percent. Major differences were noted in five programs at the Mount Pleasant Center where the percentages were 21 to 24 percent lower, child care, nurses aide, drafting, electronics and food service.

With regard to continued education, the data revealed that 21 percent of the vocational education graduates from the Mount Pleasant Center pursued advanced education compared to 4 percent for the State. Only three programs had similar percentages, auto mechanics, building trades and machine shop.

The unemployment for first-year graduates was substantially lower for most of the Mount Pleasant Area Center graduates than the state-wide averages. For all programs at Mount Pleasant Area Center, the average unemployment was 7 percent, for the State, the average

was 12 percent. In forestry, distributive education, child care and building trades, the unemployment rate was 30 to 38 percent lower for the Mount Pleasant Area Center graduates. In the nurses aide and clerical programs, unemployment was 50 percent lower for the Mount Pleasant Area Center graduates, while in drafting, printing, electronics, machine shop and food service, it was from 67 to 88 percent lower. In auto mechanics, the unemployment was the same for the Mount Pleasant Area Center graduates as in the State--10 percent.

In the four areas of comparison, employment, other, continued education and unemployment, the Mount Pleasant Area Center graduates were as successful or more so than the State average. The Mount Pleasant vocational education graduates had a higher percentage of employment, a lower percentage in the "other" category, a substantially higher percentage in continued education and 40 percent less unemployed.

Question 2

Question 2 stated: What effect did time have on the employment of voational education graduates? The data revealed that the effect time had on employment was a continuous increase of full-time employment. Full-time employment for all of the vocational education graduates was 54 percent the first year, 70 percent the third year, and 74 percent the fifth year. Part-time employment had just the inverse relationship with 14 percent the first year, 10 percent the third year, and 7 percent the fifth year. For example, in comparing programs, some of the programs had a lower percentage of increase

over the five years, but their first year full-time employment was much higher, such as machine shop with 78 percent in full-time employment, which increased to 93 percent by the fifth year, showing a 15 percent increase. Distributive education, on the other hand, had a 45 percent increase in employment over the five-year period, but full-time employment the first year was 44 percent and increased to 80 percent the fifth year. The not employed cohort, or unavailable for work, had a considerable impact on the employment data since the cohort included those vocational graduates continuing their education (although some of these were also employed), graduates in military service and homemakers. This percentage stabilized at the 19 to 20 percent level due to graduates entering and returning from the military service, graduates entering and returning from higher education, and females getting married, leaving employment for a time and then re-entering the employment arena. In analyzing the data, programs that had high enrollments of females had a lower percentage of full-time employment and fluctuated more than those that were predominantly male oriented.

Overall, the longitudinal study revealed that in all vocational programs the percentage of employment was substantially higher than the data collected at the end of the first year and the legitimate reasons for the changes.

Question 3

What effect did marital status have on the employment of vocational education graduates? was the third question. The first

year after graduation, the data revealed no difference in employment due to marital status; both single and married graduates had 72 percent employed. The third year 81 percent of the single cohort was employed and 77 percent of the married cohort was employed. The fifth year 85 percent of the single group was employed and 74 percent of the married cohort. Between the third and fifth year, the single group increased 11 percent over the married group. The other difference was a little slower decline in part-time employment for the married cohort. The overall effect as revealed by the data is that marital status on a longitudinal basis did not have a substantial effect on employment.

Question 4

The fourth question, Was there a difference between the number of vocational education graduates who entered related employment upon graduation and three and five years later? gave the following information. The total percentage of related employment for vocational education graduates for all programs continued to increase over the five-year period from 54 to 56 percent. However, in analyzing the data by program a considerable variation existed. Forestry had the greatest decline from 26 percent the first year to 12 percent the fifth year. Distributive education declined from 69 percent to 53 percent. Nurses aide declined from 82 percent to 72 percent. Food service declined from 49 percent to 33 percent. All the other programs increased their related employment with clerical making the largest gain from 65 percent to 81 percent. Analyzing the data on a

longitudinal basis by program provided some insight in terms of related employment in different programs at three different intervals in time. In addition to the program analysis the career path analysis of individual graduates revealed that 64 percent of all graduates were in a related field during the five-year period. In comparing these averages to the state average of 33 percent in related employment the Mount Pleasant vocational graduates related employment was substantially higher in all programs except forestry which was slightly below the state average.

Question 5

Question 5 read, Was the percentage of vocational education graduates employed in related occupations higher for program completers than noncompleters? In comparing the completers and noncompleters the data revealed that from 74 to 76 percent of the completers were in a related area of employment, while only 23 to 26 percent of the noncompleters were employed in a related area.

Related employment for noncompleters continued to decline over the five-year period, while the related employment for completers continued to increase.

Question 6

Question 6 asked, Was the percentage of vocational education graduates employed in a related occupation the same for male and female graduates? The related employment of males in the one-, three- and five-year follow-up showed a slight increase from 43 to

45 percent, compared to a 13 percent increase for the females from 58 to 69 percent.

In analyzing the data following career paths 55 percent of the males were employed in a related occupation compared to 76 percent of the females.

From this data one can conclude that the related employment is substantially higher for females than males.

Question 7

Was there a difference between vocational education programs as to the number of vocational education graduates who pursued higher education? was the seventh question. The first year after graduation 21 percent of the vocational education graduates continued in higher education compared to a 4 percent average for the State.

Programmatically drafting 37 percent, electronics 34 percent and printing 33 percent had the highest number of graduates enrolled in continuing education, while building trades with 5 percent and machine shop with 6 percent had the lowest enrollment in continued education.

In an unduplicated count, 364 vocational graduates or 29 percent of the total vocational education graduates continued their education after high school completion.

Question 8

Question 8 stated, Was the percentage of vocational education graduates continuing post-high-school education higher for program

completers than for noncompleters? The percentage of program completers continuing in higher education was consistently higher throughout the five-year period, from 68 to 74 percent, while the noncompleters' enrollment continued to decline from 32 percent to 26 percent. A higher percentage of noncompleters than completers were enrolled in part-time continued education.

Question 9

Question 9 was, Did the majority of the vocational education graduates remain in the local community? The majority of the vocational education graduates remained in the local community, 76 percent the first year, 73 percent the third year and 70 percent the fifth year. However, between programs a considerable amount of variation existed. In distributive education, nurses aide and clerical 80 percent were in the local community by the third year after graduation, and remained in the local community. On the other hand, at the end of five years, 60 percent of the graduates from child care and building trades had migrated out of the local community.

While the majority of graduates remain in the local community, each program has to be analyzed in order to get a true picture of its status.

Question 10

Question 10 was, Did the geographic location have an impact on related employment of vocational education graduates? For the vocational education graduates that remained in the local community,

the related employment remained the same over a five-year period, 55 percent. For the vocational education graduates that migrated out of the local community, the related employment was higher, 61 percent. Therefore, one can conclude that for graduates who are willing to migrate out of the local community, the opportunities for related employment are improved.

Question 11

What percentage of vocational education graduates entered the miliary service, by program? was Question 7. Entering the military service was 6 percent of the total graduates. Graduates entering military service came primarily from four programs--forestry, electronics, building trades and machine shop.

Most of the vocational education graduates that entered military service did so in the first three years after graduation.

Question 12

The twelfth question, Was there a difference in overall high school grade point average obtained by vocational education graduates in different vocational education programs? gave the following information. There was a considerable variation in overall grade point averages between programs. None of the vocational education graduates had a four point average. However, 84 percent had a two point average or higher compared to 16 percent with a one point or less average.

Question 13

Was there a difference in English grades earned by vocational education graduates in different vocational education programs? was

Question 13. The English grades earned by students in vocational education followed somewhat the same pattern as overall grade point averages. The four programs with the highest number of "C" grades or less were forestry, auto mechanics, building trades and machine shop. Distributive education, food service and nurses aide had from 50 to 67 percent in the "C" or less category. Drafting and clerical had 46 percent in the "C" grade category. There was a considerable variation of English grades by program, but the data indicated that the students with the highest English grades enrolled in classes that required a higher level of communication skills and reading and writing ability.

Conclusions

The data collected in this study provided the basis for a number of comparisons. The findings related to specific objectives revealed seven major conclusions.

1. Graduates from the Mount Pleasant Area Vocational Center did not completely parallel the graduate data as compiled by the Michigan State Department of Vocational Technical Services, specifically in respect to employment, continued education and unemployment.

    a. The average employment rate of vocational education graduates of the Mount Pleasant Area Vocational Center was 3 percent higher than the State average. On a programmatic basis, important differences were noted in the child care area where Mount Pleasant had 51 percent employed compared

to the State average of 39 percent. In the machine shop area, Mount Pleasant had 84 percent employed compared to the State average of 61 percent.

b. The data revealed that graduates migrate to the specific occupations trained for rather than just migrating to employment.

c. At the Mount Pleasant Area Vocational Center 29 percent of the vocational education graduates continued in higher education compared to the State average of 4 percent. Vocational education graduates who were enrolled in programs that required post-high-school education to progress up the occupational ladder continued on in higher education to achieve their goal.

d. The average unemployment rate of vocational education graduates of the Mount Pleasant Area Vocational Center was 7 percent as compared to a State average of 12 percent.

e. While the population in Isabella-Gratiot counties had a higher percentage of Caucasians (98.8 percent) than the State average (88.23 percent), the graduate placement was the same for whites as for non-whites from the Mount Pleasant Area Vocational Center.

2. The three- to five-year longitudinal model provided a better data base of vocational education graduates than an annual follow-up, specifically in regard to related employment, career paths, overall employment by program, and geographic location.

a. Related employment continued to increase from an average of 54 percent to 74 percent.

b. Overall employment continued to increase from 74 percent to 81 percent.

c. The model provided a vehicle to monitor individual career paths for employment, migration in and out of school, employment, military service, and related employment.

d. The first year after graduation, 76 percent of the vocational education graduates were in the local community. Five years later this had declined to 70 percent. In programs like child care and building trades, 60 percent had migrated out of the local community by the end of five years.

3. Graduates migrating out of the local community increased their opportunities in related employment.

4. Female vocational education graduates from the Mount Pleasant Area Vocational Center had a higher rate of employment in related occupations, 76 percent compared to 55 percent for the males.

5. Employment directly related to instruction was higher for vocational education graduates who completed a vocational education program than for noncompleters.

6. The majority of the vocational education graduates had an overall grade point average of "C" with the exception of the clerical and drafting programs.

a. The overall grade point average for the vocational education graduates of some programs was significantly lower

than the normal population; however, the success of vocational education graduates in gaining employment (93 percent) was substantially higher than the normal population of this age group (72 to 80 percent).

b. The clerical and drafting areas had more than 50 percent of the graduates with overall grade point averages of "B" or higher.

c. English grades paralleled the overall grade point averages in all programs except drafting, distributive education and clerical which were higher than the averages.

7. Graduates entering the military service from the Mount Pleasant Area Center came primarily from the Trade and Industrial areas, specifically from the machine shop, building trades, electronics, auto mechanics and forestry programs.

Recommendations

Based on the findings of this study, and ensuing conclusions, it is recommended that:

1. The State Department of Education should assume a leadership role in providing guidelines for the use of longitudinal follow-up studies of vocational education graduates, and that incentives be developed to ensure the use of longitudinal data.

2. Prior to funding major changes in vocational education, accurate labor market data that reflects the needs of the various regions in the State and the State as a whole need to be developed for program planning and career counseling at the local level.

3. Funding of vocational programs should be based on historic and future employment needs of local communities and regions rather than State ranking of total employment in order to allow program operators to plan programs based on placement of graduates.

4. Through the assistance of the State Department of Education, an analysis should be made of the skills required to succeed in various occupations and their transferability from one occupation to another by graduates.

5. Other Area Vocational Education Centers throughout the State should be encouraged to conduct similar longitudinal studies (at least on a three-year basis) of all vocational education program graduates.

6. The State Department of Education should provide leadership in the development of five- to seven-year longitudinal studies in specific fundable areas for the purpose of long-range program development.

7. Local program administrators should continue to provide career information and guidance to students so they can make better career selections and complete vocational education programs.

8. While the intent of this study was primarily of a descriptive nature, a statistical longitudinal path analysis of each occupational program in the State may be a worthwhile future undertaking.

Implications

This longitudinal follow-up study of vocational education graduates provided a broader perspective of the career paths chosen

by program graduates than the traditional annual follow-up required by state and federal guidelines. The findings suggest that the three-year follow-up reflects a more reliable data base for evaluating vocational education programs, particularly in respect to employment and continued education. The five-year follow-up tends to have its strengths in monitoring career paths and its relation to geographic location of graduates for long-term planning of programs.

Dealing with those aspects of employment related to vocational education, this study revealed a higher percentage of graduates using their skills to obtain employment than previous studies. Only the printing, drafting and forestry programs had less than 60 percent employment in a related field. The printing and drafting programs also demonstrated a higher percentage continuing in higher education, which kept them from entering the employment market until after the fifth-year follow-up.

Related placement of graduates should not be used as the only criterion of success in vocational education. Too little is known about similarity of skills required in the various occupations and the ability of graduates to transfer skills learned from one occupation to another. The major criterion should be placement in an area the graduate can become productive to society and to themselves.

With the major goal of vocational education within the content of preparing vocational education graduates for entry into a productive capacity, it must be recognized that not everyone has to enter the labor market for pay. For example, the findings of this

study show that a high percentage of child care graduates become homemakers shortly after graduation and use their skills in parenting and meeting the immediate needs of their family. While they may not be receiving financial remuneration, they are, in fact, making a major contribution to society. The findings of this study also indicate that a higher percentage of females enter related employment than males. Further study should be encouraged in other areas of the state to analyze the reasons for the differences.

The findings of this study suggest that annual and longitudinal follow-ups have a valuable contribution to make in the evaluation of vocational education. Follow-up studies in conjunction with advisory committee reviews, curriculum and facility reviews, guidance and placement evaluations should be the major evaluation criterion of vocational education evaluation.

APPENDICES

APPENDIX A

MICHIGAN DEPARTMENT OF EDUCATION VOCATIONAL EDUCATION

JOB PLACEMENT AND CONTINUED EDUCATION SUMMARY

BY PROGRAM WITHIN STATE 1-28-76

TABLE A-1.--Michigan Department of Education Vocational Education Job Placement and Continued Education Summary by Program Within State

Program	Year	Grad. Total	Total Employed		Employed Full Time Related		Full Time Unrelated		Full Time Other		Part Time Other		Cont. Ed. Full Time		Cont. Ed. Part Time		Unemployed	
			N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Forestry	1975	45	35	77.8	13	28.9	10	22.2	2	4.4	10	22.2	1	2.2	2	4.4	7	15.5
	1976	52	38	73.1	10	19.2	20	38.5			8	15.4	1	1.9			13	25.0
	1977	34	31	91.2	10	29.4	18	52.9			3	8.8					3	8.8
Distributive	1975	3430	2837	82.7	1031	30.0	744	21.7	133	3.9	929	27.0	116	3.4	58	1.7	419	12.2
Education	1976	5339	4532	84.9	1783	33.4	1172	22.0	177	3.3	1400	26.2	164	3.1	64	1.2	579	10.8
	1977	5638	4883	86.6	2090	37.0	1257	22.3	233	4.1	1303	23.1	101	1.8	40	.7	614	10.9
Nurses	1975	915	740	80.9	299	32.7	103	11.3	18	1.9	320	34.9	47	5.1	15	1.6	113	12.3
Aide	1976	1141	964	84.5	413	36.2	183	16.0	21	1.8	347	30.4	40	3.5	9	.8	128	11.2
	1977	1330	1130	85.0	444	33.3	216	16.2	29	2.2	411	33.2	30	2.3	14	1.0	156	11.7
Child	1975	503	347	69.0	95	18.8	99	10.7	9	1.8	144	28.6	26	5.2	12	2.4	118	23.5
Care	1976	724	558	77.1	145	20.0	190	26.2	13	1.8	210	29.0	26	3.6	9	1.2	131	18.0
	1977	762	584	76.6	171	22.4	198	33.2	24	3.1	191	25.0	14	1.8	9	1.2	155	20.3
Food	1975	814	641	78.7	253	31.0	150	18.4	46	5.7	192	23.6	25	3.1	9	1.1	139	17.1
Service	1976	1178	945	80.2	864	30.1	249	21.1	51	4.3	281	23.9	28	2.4	6	.8	199	16.9
	1977	1411	1141	80.9	418	29.6	352	25.0	67	4.7	304	21.5	28	2.0	12	.9	230	16.3
Clerical	1975	819	645	78.8	285	34.8	91	11.1	14	1.7	255	31.1	43	5.3	12	1.5	119	14.5
	1976	463	398	86.0	175	37.8	78	16.8	18	3.9	127	27.4	12	2.6	1	.2	52	11.2
	1977	475	411	86.5	195	41.0	109	22.9	10	2.1	97	20.4	8	1.7	5	1.0	51	10.7
Auto	1975	2124	1850	87.1	797	37.5	537	25.3	125	5.9	391	18.4	32	1.5	25	1.2	217	10.2
Mechanic	1976	2713	2408	88.8	1018	37.5	734	27.0	177	6.5	479	17.7	43	1.9	21	.8	241	8.9
	1977	3430	3053	89.0	1342	39.1	924	26.9	199	5.8	588	17.1	37	1.0	13	.4	327	9.5
Building	1975	1195	1023	85.6	404	33.8	341	28.5	84	7.0	194	16.2	15	1.3	7	.5	150	12.6
Trades	1976	514	451	87.7	170	35.0	140	27.0	42	8.2	99	19.3	10	1.9	2	.4	51	9.9
	1977	523	470	89.9	210	40.2	165	31.5	24	4.6	71	13.6	4	.8	5	1.0	44	8.4

TABLE A-1.--Continued

Program	Year	Grad. Total	Total Employed		Employed Full Time Related		Full Time Unrelated		Full Time Other		Part Time Other		Cont. Ed. Full Time		Cont. Ed. Part Time		Unemployed	
			N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Drafting	1975	394	332	84.3	95	24.0	107	27.2	19	4.8	111	28.2	26	6.6	10	2.5	26	6.5
	1976	480	421	87.7	152	31.7	104	21.7	32	6.7	133	27.7	17	3.5	6	1.3	36	7.5
	1977	535	486	90.8	182	34.0	123	22.3	24	4.5	157	29.3	17	3.2	5	.9	27	5.0
Electronics	1975	249	211	84.7	58	23.3	60	24.0	20	8.0	73	29.3	15	6.0	4	1.6	19	7.6
	1976	462	402	87.0	126	27.2	117	25.3	32	6.9	127	27.5	22	4.8	3	0.6	35	7.5
	1977	441	398	90.2	129	29.3	110	24.9	31	7.0	128	29.0	6	1.4	1	.2	36	8.2
Printing	1975	411	333	81.0	123	29.9	113	27.5	16	3.9	81	19.7	14	3.4	7	1.7	57	13.9
	1976	670	577	86.1	212	31.6	185	27.6	36	5.4	144	21.5	31	3.1	3	.4	69	10.3
	1977	803	694	86.4	251	31.3	237	29.5	26	3.2	180	22.4	9	1.1	4	.5	96	12.0
Machine Shop	1975	731	640	87.6	296	40.5	177	24.2	50	6.8	117	16.0	11	1.5	3	.2	78	10.7
	1976	1022	923	90.3	479	46.9	222	21.7	61	6.0	161	15.8	14	1.4	8	.8	77	7.5
	1977	1171	1083	92.5	633	54.0	209	17.8	56	4.8	185	15.8	12	1.0	2	.2	74	6.3
TOTAL	1975	27575	22751	82.5	9144	33.2	5685	20.6	1025	3.7	6897	25.0	1012	3.7	381	1.4	3431	12.4
	1976	31200	26714	83.6	11305	36.2	6698	21.5	1263	4.0	7448	24.0	893	2.9	303	1.0	3290	10.5
	1977	34961	30372	86.9	13405	38.3	7727	22.1	1398	4.0	7842	22.4	603	1.7	246	.7	3740	10.7

APPENDIX B

FIRST YEAR FOLLOW-UP FORM

FOLLOW-UP SURVEY OF GRADUATES

By answering the following questions you can help us to plan better educational programs for present high school students. The information you return will be used for educational purposes only. Thank you for your cooperation and assistance in completing this survey. Your name will not be released or otherwise connected with the information you provide.

PLEASE ANSWER THE ITEMS IN THIS SURVEY BY PLACING AN "X" IN THE BOX NEXT TO THE RESPONSE OF YOUR CHOICE.

No. ☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐ (1 2 3 4 5 6 7 8 9 10 11 12 13 14 15)

(First Name First Please) NAME ☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐ (16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37)

PRESENT MARITAL STATUS: (Check One) 1. ☐ Single 2. ☐ Married 3. ☐ Divorced 4. ☐ Separated

IF MARRIED, PLEASE GIVE MAIDEN NAME ☐☐☐☐☐☐☐☐☐☐☐☐☐ (38 39 40 41 42 43 44 45 46 47 48 49 50 51)

AND WIFE OR HUSBAND'S NAME ☐☐☐☐☐☐☐☐☐☐☐☐ (52 53 54 55 56 57 58 59 60 61)

(Number and Name)

STREET ☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐ (62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83)

(No Rt No Please)

City ☐☐☐☐☐☐☐☐☐☐☐☐☐☐ (84 85 86 87 88 89 90 91 92 93 94 95 96 97 98) State ☐☐ (99 100) Zip Code ☐☐☐☐☐ (101 102 103 104 105)

Area Code

PHONE NUMBER ☐☐☐ (106 107 108) ☐☐☐ (109 110 111) ☐☐☐☐ (112 113 114 115) Graduate of (Check One) 16

☐ Alma 1 ☐ Ashley 2 ☐ Beal City 3 ☐ Breckenridge 4 ☐ Fulton

☐ Ithaca 5 ☐ Mt. Pleasant 6 ☐ Sacred Heart 7 ☐ St. Louis 8 ☐ Shepherd 9

Check the word that best describes the training you received at the Area Center:
17. 1. ☐ Very Good 2. ☐ Good 3. ☐ Average 4. ☐ Poor

The classes you took at the Area Center were your (Check One):
21. 1 ☐ 1st Choice 2 ☐ 2nd Choice 3 ☐ 3rd Choice

The occupational counseling you received at the Area Center was (Check One):
22. 1. ☐ Very Helpful 2. ☐ Helpful 3. ☐ No Help 4. ☐ Received None

The instruction you received at the Area Center (Check One):
23. 1. ☐ Needed more lab 2. ☐ Needed more theory 3. ☐ Both were adequate
4. ☐ Needed more lab and theory

How much contact have you had with the Center since graduation? (Check One)
24. 1 ☐ Some 2. ☐ None

Which of the following statements describes your present status?
25. I am now employed: 2. ☐ Full time (30 hrs. + wk.) 3. ☐ Part Time (Less than 30 hrs)
4. ☐ I am not now employed 6. ☐ Graduate has deceased

Office Use Only ☐ S.U. 1.

29. 1. ☐ I am a homemaker

33. 1. ☐ I am looking for a job
2. ☐ I am not looking for a job

34. I am/will be/have been in the Military Service (by January 1978. Which branch?)
1. ☐ Army 2. ☐ Navy 3. ☐ Air Force 4. ☐ National Guard
5. ☐ Coast Guard 6. ☐ Marines 7. ☐ Reserves 8. ☐ Veteran

35. 1. ☐ I am a full time student (12 hrs. or more)
2. ☐ I am a part time student (Less than 12 hrs.)

PART 2 - EMPLOYED
DIRECTIONS

IF YOU ARE EMPLOYED FULL OR PART TIME NOW, OR IF YOU ARE IN THE MILITARY, PLEASE COMPLETE THIS PART OF THE SURVEY. OTHERWISE GO DIRECTLY TO PART 3, UNEMPLOYED - SEEKING WORK.

Name of Employer: ☐☐☐☐☐☐☐☐☐☐ (36 37 38 39 40 41 42 43 44 45)

☐☐☐☐☐ Office use only

City State Zip Code

County: (Check One) 46. 1. ☐ Isabella 2. ☐ Gratiot 3. ☐ Clare 4. ☐ Mecosta
5. ☐ Midland 6. ☐ Saginaw 7. ☐ Other in State 8. ☐ Other out State

Job Title:_____

In relation to the classes I took at the Area Center, my job is: (Check One)
50. 1. ☐ Directly Related 2. ☐ Somewhat Related 3. ☐ Not Related

In addition to training you, what did your Area Center do to HELP you FIND a job? (Check ALL that apply)
54. 1. ☐ Told me about job openings
55. 1. ☐ Sent me for an interview
56. 1. ☐ Taught me to fill out a job application
57. 1. ☐ Gave information about me to my employer
58. 1. ☐ Other (Please Specify)_____
59. 1. ☐ None of the above

Who helped you to find a job? (Check ALL that apply)
60. 1. ☐ Area Center Counselor
61. 1. ☐ Teacher or co-op coordinator
62. 1. ☐ Parent, other relative or friend
63. 1. ☐ Area Center Placement Office
64. 1. ☐ Public employment agency
65. 1. ☐ Private employment agency
66. 1. ☐ College placement office
67. 1. ☐ Other (Please Specify)_____
68. 1. ☐ No one but myself

On your present job, how well did your Area Center program train you to work with your supervisor?
69. 1. ☐ Very Good 2. ☐ Good 3. ☐ Average 4. ☐ Poor

How long have you been working for your present employer since graduation?
70. ☐ 6 mo. 1. ☐ 1 yr. 2. ☐ 2 yr. 3. ☐ 3 yr. 4. ☐ 4 yr.
5. ☐ 5 yr. 6. ☐ 6 yr. 7. ☐ 7 yr.

On your present job, how much do you use the vocational training you received at the Area Vocational Education Center?
74. 1. ☐ A lot 2. ☐ Some 3. ☐ Hardly any 4. ☐ None

Overall, how satisfied are you with your present job? (Check ONE Only)
78. 1. ☐ Very satisfied 2. ☐ Somewhat satisfied 3. ☐ Not very satisfied
4. ☐ Not at all satisfied

On my present job I am paid about _____ per hour. (82 85)

PART 3 · UNEMPLOYED · SEEKING WORK DIRECTIONS

IF YOU ARE PRESENTLY UNEMPLOYED AND ARE LOOKING FOR A JOB, COMPLETE THIS PART OF THE SURVEY. OTHERWISE, GO DIRECTLY TO PART 4 · FURTHER EDUCATION.

Who have you asked for help in finding a job? (Check ALL that apply)

- ☐ Area Center Counselor
- ☐ Teacher or co-op coordinator
- ☐ Parent, other relative or friend
- ☐ Area Center Placement Office
- ☐ Public employment agency
- ☐ Private employment agency
- ☐ College placement office
- ☐ Other (Please specify) _____
- ☐ None of the above

PART 4 · FURTHER EDUCATION DIRECTIONS

IF YOU ARE NOW ATTENDING SCHOOL OR ARE ENROLLED IN A TRAINING OR APPRENTICESHIP PROGRAM, PLEASE COMPLETE THIS PART OF THE SURVEY. OTHERWISE, GO DIRECTLY TO PART 5 COMMENTS.

Name of School, Training, or Apprentice program: _____

_____ City _____ State ☐☐☐☐☐ 98 99 100 101 102

104. I am enrolled in a : 1. ☐ 6 mo. 5. ☐ One year 2. ☐ Two year
3. ☐ Four year 6. ☐ Five year 7. ☐ Undecided . . . . . .program.

105. Have you graduated? 1. ☐ Yes 2. ☐ No

106. Are you still attending? 3. ☐ Yes ☐ No

My major area of training is: _____

107. In relation to the classes I took at the Area Center, my major area of training or study is: (Check One)
1. ☐ Directly Related 2. ☐ Somewhat Related 3. ☐ Not Related

107. In your major area of study or training, how much do you use the vocational training you received at the Area Center?
☐ A lot ☐ Some ☐ Hardly Any ☐ None

Check ALL who assisted you in finding and/or getting your present educational program.

- ☐ Area Center Counselor
- ☐ Teacher or co-op coordinator
- ☐ Parent, other relative or friend
- ☐ Area Center Placement Office
- ☐ Training or apprentice program recruiter
- ☐ Other (Please specify) _____
- ☐ No one but myself

GO TO PART 5

PART 5 — COMMENTS

Comments and/or Suggestions:

SCHOOL USE ONLY

1.
64 [1]
[2]

If an AREA CENTER, report student's home district Identification. CEPD CODE
73

2. O. E. Code ___ ___ . ___ ___ ___ ___
65

Information obtained by telephone contact [ ]
80

Name of Program _____

3.
71 [1]
[2]

4.
72 [1]
[2]

APPENDIX C

THIRD AND FIFTH YEAR FOLLOW-UP FORM

YEAR OF FOLLOW-UP 3 ☐ 5 ☐ 7 ☐

FOLLOW-UP SURVEY OF GRADUATES

By answering the following questions you can help us to plan better educational programs for present high school students. The information you return will be used for educational purposes only. Thank you for your cooperation and assistance in completing this survey. Your name will not be released or otherwise connected with the information you provide.

PLEASE ANSWER THE ITEMS IN THIS SURVEY BY PLACING AN "X" IN THE BOX NEXT TO THE RESPONSE OF YOUR CHOICE.

NO. ☐☐☐☐☐☐☐☐☐☐☐☐☐☐ (1 2 3 4 5 6 7 8 9 10 11 12 13 14)

PART I

DIRECTIONS: EVERYONE SHOULD COMPLETE PART I

First Name ☐☐☐☐☐☐☐☐ (14 15 16 17 18 19 20 21) ☐ (22)

Middle Initial ☐ (23)

Last Name ☐☐☐☐☐☐☐☐☐☐☐☐☐ (24 25 26 27 28 29 30 31 32 33 34 35 36 37)

Present Marital Status: (Check One) [15] ☐ 1 Single ☐ 2 Married ☐ 3 Divorced ☐ 4 Separated

If married, please give maiden name ☐☐☐☐☐☐☐☐☐☐☐☐☐ (38 39 40 41 42 43 44 45 46 47 48 49 50 51)

, and wife or husband's name ☐☐☐☐☐☐☐☐☐☐☐ (52 53 54 55 56 57 58 59 60 61)

Street Number (No Route No.) ☐☐☐☐☐ (62)

Street Name (Please write Street Name & Apt. or Lot #) ☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

City ☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐ (84)

State ☐☐

Zip Code ☐☐☐☐☐

Phone Number Area Code ☐☐☐ ☐☐☐☐☐☐☐ (106)

Graduate of: (Check One) 16

- ☐ Alma
1 ☐ Ashley
2 ☐ Beal City
3 ☐ Breckenridge
4 ☐ Fulton
5 ☐ Ithaca
6 ☐ Mt. Pleasant
7 ☐ Sacred Heart
8 ☐ St. Louis
9 ☐ Shepherd

18-20 Check the word that best describes the training you received at the Area Center:

1 ☐ Very Good 2 ☐ Good 3 ☐ Average 4 ☐ Poor

26-28 Which of the following statements describes your present status? (Check all that apply)

2 ☐ Employed Full Time (30 hrs. +) 3 ☐ Employed Part Time (Less than 30 hrs.)

4 ☐ Not employed 6 ☐ The graduate has deceased

29 1 ☐ I am a homemaker 1 ☐ S.U. (OFFICE USE ONLY)

33
1 ☐ I am looking for a job
2 ☐ I am not looking for a job

34 I am/will be/have been in the Military Service (by January 1979). Which branch?

1 ☐ Army 2 ☐ Navy 3 ☐ Air Force 4 ☐ National Guard
5 ☐ Coast Guard 6 ☐ Marines 7 ☐ Reserves 8 ☐ Veteran

35
1 ☐ I am a full time student
2 ☐ I am a part time student

PART 2 - EMPLOYED
DIRECTIONS FOR PART 2

IF YOU ARE EMPLOYED FULL OR PART TIME NOW, OR IF YOU ARE IN THE MILITARY, PLEASE COMPLETE THIS PART OF THE SURVEY. OTHERWISE GO DIRECTLY TO PART 3, FURTHER EDUCATION.

Name of Company: _____

_____
City State Zip Code

47-49 County: (Check One) 1 ☐ Isabella 2 ☐ Gratiot 3 ☐ Clare 4 ☐ Mecosta
5 ☐ Midland 6 ☐ Saginaw 7 ☐ Other in state 8 ☐ Other out state

Job Title: _____

51-53 In relation to the classes I took at the Area Center, my job is: (Check One)
1 ☐ Directly Related 2 ☐ Somewhat Related 3 ☐ Not Related

71-73 How long have you been working for your present employer since graduation?
- ☐ 6 mo. 1 ☐ 1 yr. 2 ☐ 2 yrs. 3 ☐ 3 yrs. 4 ☐ 4 yrs.
5 ☐ 5 yrs. 6 ☐ 6 yrs. 7 ☐ 7 yrs.

75-77 On your present job, how much do you use the vocational training you received at the Area Vocational Education Center?
1 ☐ A lot 2 ☐ Some 3 ☐ Hardly any 4 ☐ None

79-81 Overall, how satisfied are you with your present job? (Check ONE Only)
1 ☐ Very Satisfied 2 ☐ Somewhat Satisfied 3 ☐ Not Very Satisfied
4 ☐ Not At All Satisfied

95-97 On my present job I am paid about _____ per hour.

PART 3 - FURTHER EDUCATION
DIRECTIONS FOR PART 3

IF YOU ARE NOW ATTENDING SCHOOL OR ARE ENROLLED IN A TRAINING OR APPRENTICESHIP PROGRAM, PLEASE COMPLETE THIS PART OF THE SURVEY. OTHERWISE, GO DIRECTLY TO PART 4 - COMMENTS.

Name of School, Training, or Apprentice program: _____

_____
City State

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☐☐☐☐☐☐
98 99 100 101 102

104 I am enrolled in a: 1 ☐ 6 mo. 5 ☐ One year 2 ☐ Two year
3 ☐ Four year 6 ☐ Five year 7 ☐ Undecided .....program.

105 Have you graduated? 1 ☐ Yes 2 ☐ No

106 Are you still attending? 3 ☐ Yes ☐ No

My major area of training is: _____

107 In relation to the classes I took at the Area Center, my major area of training or study is: (Check One)
1 ☐ Directly Related 2 ☐ Somewhat Related 3 ☐ Not Related

PART 4 - COMMENTS

ANY COMMENTS OR SUGGESTIONS YOU MAY HAVE CAN BE WRITTEN EITHER IN THE SPACE BELOW OR YOU MAY ENCLOSE ANOTHER SHEET. INCLUDE ANY TYPE OF ASSISTANCE YOU MIGHT NEED NOW OR THINGS YOU WOULD HAVE LIKED TO HAVE HAD IN YOUR HIGH SCHOOL PROGRAM.

APPENDIX D

FOLLOW-UP LETTER

MT. PLEASANT PUBLIC SCHOOLS

Vocational Education Department
1155 S. Elizabeth St.
Mt. Pleasant, MI. 48858
517-773-7961

Dear Graduate:

With the footballs in the air, baseball season coming to a close, and the trees putting on their color splendor, it is again time to contact the graduates of the Area Skill Center to obtain some brief information.

The follow-up survey has now been computerized for faster and more indepth study of the information you supply us. This helps us greatly in evaluating the program and to make recommendations.

All information you supply to us will be used for statistical and evaluation reporting. Your identity will remain confidential.

If you desire assistance in job location or information for further training, please contact the Placement Office at (517) 773-7961.

Thank you for your prompt reply on the enclosed survey form. For your convenience a postage paid envelope has also been enclosed.

Sincerely,

Enclosures

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