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AN EVALUATION OF THE RETAIL SEGMENT OF THE COMMERCIAL
FLORICULTURE TECHNICIAN PROGRAM AT
MICHIGAN STATE UNIVERSITY

By

Donald Arthur Dunbar

A DISSERTATION

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ABSTRACT

AN EVALUATION OF THE RETAIL SEGMENT OF THE COMMERCIAL FLORICULTURE TECHNICIAN PROGRAM AT MICHIGAN STATE UNIVERSITY

By

Donald Arthur Dunbar

Purpose. This study was made to evaluate the retail segment of the Commercial Floriculture Technician Program at Michigan State University.

The objective of the study was to determine the effectiveness of the program in preparing students for their chosen occupations.

Methodology. The evaluation was conducted by means of a mailed questionnaire survey. The instrument was sent to those ninety-nine former students who completed two or more terms of academic work in the entering classes of 1964, 1965, 1966, 1967, or 1968 and to forty-one employers of former students to obtain basic information and an accurate mailing list. All former students were contacted by phone and by mail. Eighty-five percent of the former students and 78% of the employers responded to the questionnaire. The former students working in the industry, the non-persisters and the employers all received different questionnaires. Basically the instrument was divided into four sections. Persisters and employers rated the importance of forty-nine skills to the performance of the students present job. The students noted where they learned these skills and the employers evaluated their performance

of the skills on the job. The other sections were educational activities, program improvement and job history.

Findings. Persistence: Fifteen percent more males than females persist in the industry--this includes 31% of the females who are working part-time. Students from florist families have an 85.19% persistence rate as compared with 59% for everyone else. Dropouts have a lower G.P.A. than any other group.

Hiring Practices. The large and very large shops hire 76.5% of all former students. Employers hire new employees from several sources: 39% from "off the streets," 14% from the "U" Technical program, 9.25% from design schools, and 9.25% from vocational schools.

Former Student Employment Status. Sixty percent of the students are in management positions. The mean monthly salary for the following positions are: store manager--\$732.00; assistant manager--\$567.00; department manager--\$513.00; designers--\$461.00. The graduates average stay in each job is 25.6 months and 11% were earning over \$10,000.00 annually. Seventy percent of the graduates persist in the industry as compared with 40% of the dropouts. The most important reasons for graduates changing jobs is advancement, "didn't like employer," and working conditions. The main reason non-persistent dropouts left their jobs was low wages. The vast majority, 96.43% of the employers were either satisfied or very satisfied with their former students.

Skills. Former students felt the most important design skills were: pricing and designing arrangements profitably, designing to please customers, and using good color combinations. Employers agreed with the students but added the appreciation of the business aspect of design.

Students felt the most important management skills were meeting the public, planning, communicating, getting along with employees and public relations. To these skills, employers added the ability to use the phone.

The students reported that 52% of the skills were learned either on placement training or "outside M.S.U."

Educational Activities. The class and spring field trips, industry conventions and the bridal show were considered very beneficial.

Program Improvement. "Outside" speakers, placement training, and practical class projects were the three most popular program elements.

Eighty-eight percent of the former students would recommend the program to a friend and 90% felt they received a good floriculture background from the program.

The students felt the program could be improved with more floral design experience, more business classes and by dropping or strengthening the non-horticultural courses.

Conclusions and Recommendations

1. Conduct an annual student program evaluation before graduation.
2. More academic and placement training counseling is needed.

Two visits by the coordinator are also suggested.

3. More business and design courses are needed. Several non-horticulture courses need to be strengthened or dropped.
4. The admission standards of the program need to be toughened.
5. Add a three term strictly vocational program and build the "2 year program" into a full two year associate degree program.

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CHAPTER I

INTRODUCTION

In 1963 Congress passed the Manpower Development and Training Act, commonly referred to by educators as the Vocational Education Act. This act solidified the ideas and philosophies of vocational educators across the nation by providing funds to enlarge the number of permanent vocational training programs in the United States. The idea of vocational training was formally implemented when grants were given to states to establish training in the areas of agriculture, trade, industry, home economics, teacher training and administration. Since 1963 additional training areas have been added such as nursing, fisheries and distributive occupations.¹

Since the inception of this act there have been changes in the financial base of operation of vocational education. Before 1960 the U.S. government provided \$50 million a year to all vocational education programs. In 1965 these programs were given \$255 million and in 1968, \$542 million. After a 10 year period, by 1973, the funds allotted to the program has increased 18 fold to \$910 million. Not only has the amount of Federal support money increased, but the states are also allocating vast resources for this cause. In 1963 the states were

¹The Vocational Education Act of 1963, Report No. OE-80034 65, Office of Education (DHEW), Washington, D.C.

spending three dollars on this program for every dollar received from the Federal Government.²

Many additional laws have been passed since 1963 which have strengthened the vocational education program in the United States. Norman Harris, a prominent educator, states that these laws were well founded because of a foreseeable need of technicians. He estimates that in the 1970's over 75,000 technicians will be needed in the fields of agriculture and natural resources alone.³ One reason for this need is the expansion of our economy. In 1900 only about 10% of the labor force was categorized as service workers. In 1980 the figure will be over 13%, and one-half of these workers will be in white collar jobs. In addition, by 1980, 7 out of every 10 non-farm workers will be employed in a service industry. The professional and technical segment of the working force is expanding faster than any other group.⁴

Because of this need of, interest in and support for vocational education, there was a spectacular increase in enrollment in agriculture and natural resources in post-secondary institutions. Between 1966 and 1970 enrollment in these institutions doubled from 10,290 to an estimated 21,500. During this same period the number of teachers doubled from 142 to 290, as did the number of institutions teaching vocational

¹William Gary Ward, "Process Evaluation of Vocational Education," A Review and Synthesis of Selected 'Research in Education' Documents. Oklahoma Vocational Research Coordinating Unit, Stillwater, Oklahoma, August 1970.

²Allen Sherman, G. Arden and L. Pratt, "Agriculture and Natural Resources Post Secondary Programs," American Association of Junior Colleges, Washington, D.C., 1971.

³Russell B. Flanders, "Learning to Serve to Earn," A Report of the Governor's Symposium on Vocational Education. Ohio State University, July 1969.

education. There are now more than 1,000 two-year post-secondary schools in the United States and their number is increasing at the rate of approximately one each week. About 300 of these institutions offer agricultural programs. The greatest growth of these institutions is occurring at the community college level rather than at the technical college, technical institute or junior college level.⁵

With the heavy emphasis of interest and dollars in vocational education there was a corresponding interest in the efficiency with which this money was being spent. The 1968 amendment to the Vocational Education Act of 1963 requires the state advisory councils to conduct an annual program, service and activity evaluation. With this amendment, evaluation becomes an integral part of any vocational-technical program.⁶

Purpose

This paper is basically an evaluation of the retail segment of the Commercial Floriculture Technical Program at Michigan State University. The program was evaluated by means of a follow-up study of graduates and other former students and their employers.

The objectives of this study were to:

1. Determine what skills were important to and needed by persistent former students in order to perform their jobs satisfactorily, as evaluated by themselves and by their employers.

⁵Sherman, op. cit.

⁶Ward, op. cit.

2. Determine where the above skills were learned as recalled by the student.
3. Determine the relative importance of the skills as rated both by the former student and his employer.
4. Determine the ability of persistent former students to perform the skills listed as rated by their employers.
5. Determine the skills or training the graduates felt they lacked upon completion of the program.
6. Determine whether or not the instructional objectives of the Floral Design courses were met.
7. Determine which educational activities the former students participated in.
8. Determine the educational contribution that former students felt they received from each of the eight listed school activities.
9. Determine former students' opinions on sixteen aspects of the technical program.
10. Determine former students' opinions as to the importance of their many program related relationships in gaining a better understanding of the floral industry.
11. Determine former students' opinions of the Commercial Floriculture Technical Program.
12. Determine the reasons former students left the program.
13. Determine the employment history of former students.

14. Determine the percentage of graduates who remain within the floral industry and their reasons for persistence or lack of persistence.
15. Determine the relationship between scholarship and persistence in the graduates. Can a student's persistence in the industry be pre-determined by his scholarship in the program?
16. Compare the persistence rates between the sexes and between students from florist industry families with those from non-florist families.

Hypotheses

1. There is a direct relationship between program persistence and occupational persistence.
2. Former students will judge the importance of skills needed for their present job with significant difference from their employers' evaluation of the importance of the skills.
3. There will be a diversity of opinion in former students' evaluations of the total Commercial Floriculture Program at Michigan State University.
4. There will be a high correlation between former students' persistence and their participation in the listed educational activities.

Terms Defined

Dropout or non-finisher: A student who completed one to four terms of class work, but failed to complete the graduation requirements.

Employers: Floral industry firms, organizations or vocational agricultural schools which employ former students of the Commercial Floriculture Technical Program at Michigan State University.

Graduates: Students who have completed all the requirements for graduation from the Commercial Floriculture Technical Program.

Former students: Any student of the Commercial Floriculture Technical Program who has completed a minimum of two terms of class work.

Persisters: Any former student who is now employed in the floral industry, regardless of a possible employment period in another industry or anyone who left the flower industry and is now in the military service. Housewives may be employed on either full or a part-time basis.

Non-persisters: Any former students who are not employed in the floral industry, are not horticultural students, or who entered the military service from a non-horticultural occupation.

Basis for the Study

Even though some vocational program leaders oppose evaluation and view it as a threat to their job security, it can be and usually is a very positive force in program improvement. There are many ideas as to how these evaluations should be conducted.

David⁷ states that the way to evaluate a program is to determine the extent of change in the behavior of an individual through achievement testing.

Spiess⁸ describes a four stage type of evaluation used with the cooperation of state and local advisory councils. The four steps of his program deal with program evaluation, product and process evaluation, cost benefit studies and an impact study of vocational education.

Brahms⁹ lists six methods of program evaluation. Three are as follows:

1. Graduate interviews (before leaving schools).
2. Achievement testing.
3. Licensing examination through state-national examinations.

Little¹⁰ details three types of studies on evaluation:

1. The Administrative Report. These are reports on the information gathered describing the occupational status of graduates

⁷Harry F. David, "Standardized Achievement Tests as a Technique for Evaluating Vocational and Technical Education Programs," an unpublished paper delivered to the National Conference on Evaluating Vocational and Technical Education Programs, Atlantic City, New Jersey, October 1968.

⁸Kathryn Spies and Eugene R. Spiess, "A Guide to Evaluation; Massachusetts," September 1969.

⁹Arthur Bruhns, "Evaluation Processes Used to Assess the Effectiveness of Vocational-Technical Programs," School of Education Seminar paper presented to the graduates, University of California at Los Angeles, December 1968.

¹⁰Kenneth J. Little, "Review and Synthesis of Research in the Placement and Follow-Up of Vocational Education Students," Research Series No. 49, Columbus, Center for Vocational Technical Education, The Ohio State University, February 1970.

of specific programs. The findings are often of little value.

2. Benefit-Cost Studies. They further refine the educational training process by proving the economic effectiveness of vocational education. They are extremely difficult to carry-out and their accuracy and value depend to a large extent on the methods used.
3. Comparative Studies. These studies compare the graduates of different types of educational programs within the same school or the same state.

However, according to the National Advisory Council on Vocational Education, "Effective occupational preparation is impossible if the school feels that its obligation ends when the student graduates. The school, therefore, must work with employers to build a bridge between school and work. Placing a student on the job and following up his successes and failures provides the best possible information to the school on its strengths and weaknesses."¹¹ Hence the need for follow-up studies is apparent.

Defined by O'Connor, the follow-up study is, "a process by which an educational institution seeks to determine how effectively it is meeting the needs of those it serves. It is introspective . . . it

¹¹Advisory Council on Vocational Education, "Vocational Education: The Bridge Between Man and His Work," Reproduction by Center for Studies in Vocational and Technical Education, University of Wisconsin, 1967.

determines how well the stated objectives of the college are being achieved."¹²

Need for the Study

Since its inception in 1947 there has never been a follow-up evaluative study of the persistence of the graduates of the Commercial Floriculture Technical Program at Michigan State University.

Most every area of the floral industry is in critical need of trained help. The manpower needs to Michigan' floral industry are enormous. It is estimated that about 200 workers are needed by the state's flower growers, another 100 by the wholesalers and about 2,400 employees by the state's 1,300 retail florists.¹³ How many graduates have we lost from the industry and why? How many students have dropped out of the program and what vocation did they enter? What has happened to those students and where are they or why aren't they working in the floral industry?

There is no contact with floriculture alumni as such unless they are members of the Alumni Association and receive their periodic mailings. Since few graduates join the association there is little alumni contact and most of the floriculture graduates are "lost" to the Institute of Agricultural Technology.

¹²Thomas O'Connor, "Follow-up Studies in Junior Colleges, A Tool for Instructional Improvement," Washington, D.C., American Association of Junior Colleges, 1967.

¹³Donald A. Dunbar, "A Manpower Survey of Various Segments of the Michigan Floriculture Industry," Master's thesis, Michigan State University, 1968.

The graduates could be a valuable resource. They could provide the necessary evaluative information about the program, and they are in the best possible position to provide feedback to the program coordinators.

High school, area vocational school and college counselors have a great need for career planning information. Vocational teachers, administrators, floral association leaders and floral industry personnel could all use information that could be gathered from such a survey. The information could be useful to anyone recruiting for the floral industry. Such a study would uncover valuable data on the work history and persistence of graduates as well as information on their rate of advancement and job opportunities--information all students and potential students are interested in.

This study could also be invaluable to the Agricultural Technology Institute administrators, curriculum planners, and instructors as an evaluation of both courses and their content.

Dr. H. Ecker, Director of the Institute of Agricultural Technology, Dr. John Carew, Chairman of the Department of Horticulture and Dr. Norman Brown, who at the time of the initiation of this study was the Assistant Director of Residential Instruction, all expressed their desire for and need of such a study in letters which are in Appendices A, B and C.

One cannot deny the need for a constant evaluation of all educational programs. This procedure is common to industry as well as to educational institutions. The government too is a strong supporter of this concept. In fact, any program which receives Federal aid or

assistance must be evaluated annually as required by Public Law 90-576 (Amendment to the Vocational Education Act of 1963).

Follow-Up Study Guidelines

Only those former students who completed a minimum of two terms of training in the Commercial Floriculture Technical Program and were in the entering classes of 1964, 1965, 1966, 1967 or 1968 were included in this survey. Because of insufficient numbers, the production oriented students were not included in this study.

CHAPTER 1.

REVIEW OF THE LITERATURE

This follow-up study was conducted to evaluate the retail area of the Commercial Floriculture Technical Program within the Institute of Agricultural Technology at Michigan State University. Therefore, the greatest emphasis in this review of literature is on other follow-up studies conducted by post-secondary agricultural education institutions. However, a few of the studies reported involved secondary educational institutions. Some of the latter did not offer an agricultural curriculum but were included when this author deemed it fruitful.

Follow-up studies have many purposes. One of them, evaluation, is alluded to by Little. He comments that "follow-up studies of graduates of vocational education programs, if carefully planned and executed, can provide an important base of information to educational planners and administrators and to future vocational technical students." He said that ". . . when they are coupled with appropriate analysis this type of information can point the way to improved decision making by government and institutions on questions of priorities among types, levels and fields of education and training programs. . . ." ¹⁴

Even though educators believe in evaluation, not all of them think it is being utilized to its full potential. According to Moss, ". . .

¹⁴Little, op. cit.

program evaluation in vocational, technical, and practical arts education has been an incidental, casual, and sporadic activity."¹⁵ He says that this situation is due to political considerations and a shortage of trained researchers.

The word "evaluation" has many different meanings and implications, depending upon the user and the audience. Webster says that "to evaluate" is "to determine or to fix the value of . . . or to examine and judge." Educators, such as Guba, call it "a process of providing and using information for making educational decisions."¹⁶ Kaufman calls it "a measurement of attainment of goals . . . an estimate of the value of existing programs."¹⁷ Bruhns is more specific in defining it as ". . . the process used to assess the effectiveness of Vocational Technical Programs."¹⁸

Characteristics of Program Evaluation

From the study of the evaluation of many educational programs, it becomes obvious that the science of evaluation has many facets, some

¹⁵Jerome Moss, "The Evaluation of Occupational Educational Programs," University of Minnesota Technical Report, Research Coordinating Unit in Occupational Education, September 1968.

¹⁶Egon G. Guba, "Evaluation and Changes in Evaluation," paper presented at Elk Grove Training and Development Center Spring Evaluation Conference, Arlington Heights, Illinois, 1968.

¹⁷Jacob J. Kaufman, "Cost Effectiveness Analysis as a Method for the Evaluation of Vocational and Technical Education," Office of Education (D.H.E.W.), Washington, D.C., December 1968.

¹⁸Bruhns, op. cit.

more important than others. All of those listed below are not essential or present in every program evaluation, but the majority usually are.

1. Evaluation must be continuous. "Evaluation must be a continuous process, not a vaccination to make the program immune to the need for subsequent change."¹⁹ This is important for quality control, for continuity and to keep program administrators always aware of this educational function.
2. It should be made in terms of the objectives or purposes of the program according to Starr,²⁰ Weisbrod,²¹ and many others. Messick says that such research should also include both possible and intended outcomes.²²
3. It should include appraisal of both the program process and product as reported by Sutherland²³ and Merriman.²⁴
4. It should be economically oriented with some type of cost

¹⁹Sid S. Sutherland, "Objectives and Evaluation in Vocational Agriculture," Evaluation and Program Planning in Agricultural Education. (Columbus: Center for Vocational and Technical Education, The Ohio State University, 1966), pp. 14-18.

²⁰Harold Starr, "A System for State Evaluation of Vocational Education," Interim Report Research Series No. 45, Columbus: Center for Vocational and Technical Education, The Ohio State University, August 1969.

²¹Burton A. Weisbrod, "Conceptual Issues in Evaluating Training Programs," Monthly Labor Review, Vol. 89, No. 10, October 1966, pp. 1091-97.

²²Samuel Messick, "Evaluation of Educational Programs as Research on Educational Processes," 1969.

²³Sutherland, op. cit.

²⁴Howard O. Merriman, "Evaluation of Planned Educational Change at the Local Education Agency Level," February 1967.

benefit factors built in since education is usually one of the largest items in a state's budget.

5. It should weigh both the advantages and disadvantages of a program.²⁵
6. It should not only be based on what has been done, but also on what should have been done.²⁶
7. It should be subject to change when change is beneficial.²⁷
8. It should be conducted by teams composed of both professional and lay people.²⁸

Purpose of Evaluation

"As vocational and technical education has assumed new visibility increased emphasis is being placed on accountability through evaluation systems."²⁹ Evaluation through the follow-up survey provides a feedback mechanism to monitor the effectiveness and efficiency of the educational process and product. Without some evaluative system, program improvement would be much slower to come and administrators would be much less sensitive to the need for it.

²⁵Weisbrod, op. cit.

²⁶Sutherland, op. cit.

²⁷Harris W. Reynolds, Sydney M. Grobman, and Irvan C. McGree, "Evaluation Criteria for Vocational Technical Programs," Commonwealth of Pennsylvania: Department of Public Instruction, 1967.

²⁸Sutherland, op. cit.

²⁹Starr, op. cit.

After conducting an eight year study, Smith and Tyler listed their reasons for evaluation.³⁰

1. To make a periodic check on the effectiveness of the educational institution, and thus indicate the points at which improvements in the program are necessary.
2. To validate the hypotheses upon which the educational institute operates.
3. To provide a certain psychological security to the school staff, students and parents.
4. To provide information basic to the effective guidance of individual students.
5. To provide a sound basis for public relations.

The main purpose of evaluation, according to Sutherland is to ". . . provide quality control and a basis for intelligent change."³¹

But there are many other purposes of evaluation. According to Byrum,³² the follow-up study can be expected to produce the following information:

1. The horizontal and vertical mobility in occupation.
2. New placement training locations.

³⁰Eugene Smith and Ralph Tyler. Appraising and Recording Student Progress (New York: Harper and Brothers, 1942), pp. 7-11.

³¹Starr op. cit.

³²Harold Byrum, "Evaluation of Local Vocational Education Programs: A Manual for Administrators, Teachers and Citizens," East Lansing: Bureau of Research Services, College of Education, Michigan State University, 1965.

3. The extent of student migration.
4. The job titles and descriptions as perceived by employees and employers.
5. Working conditions encountered and job satisfaction.
6. The abilities acquired in school that have been used on the job in performing the job requirements.
7. These tasks required by the job in which the school has failed to give the students an acceptable level of competency.
8. Supervision received.
9. Other specific training and education shown to be needed of employees in the future.
10. Subsequent education taken and/or desired.

The above information is useful only insofar as it relates to the educational objectives of a program. Smith and Tyler suggest that the schools seek to bring about the kind of behavioral changes as listed in the program objectives.³³ As previously noted these objectives should be in measurable behavioral outcomes and ". . . may even go so far as to specify the level of competency with regard to specific outcomes."³⁴

The Landscape and Nursery Technician Program within the Institute of Agricultural Technology at Michigan State University has such outcomes stated in behavioral terms.³⁵

³³Smith, op. cit.

³⁴Paul L. Dressel, "Procedures in the Evaluation of Education Programs," paper presented at Evaluation Systems Project Workshop, Michigan State University, May 1966.

³⁵"Program Objectives--Landscape and Nursery Technician Program," East Lansing, Institute of Agricultural Technology, Michigan State University, 1971.

1. To develop competencies needed by individuals engaged in or preparing to engage in supervisory or technician positions in the landscape and nursery industry.
2. To develop an understanding of the landscape and nursery industry so the individual can make a decision as to his place in the industry.
3. To secure satisfactory employment and to advance in the landscape and nursery industry through a program of continuing education.
4. To develop those abilities in human relations which are essential for satisfactory performance in the landscape and nursery industry.
5. To develop the abilities needed to exercise and follow effective leadership in fulfilling occupational, social, and civic responsibilities.

Each of these objectives has a group of corresponding behavioral objectives which specify competencies.

Information gained from follow-up studies can provide a base for:

1. Reducing the dropout rate.
2. Establishing norms on aptitude and vocational aspirations.
3. Assessing the degree to which curriculum and instruction are adapted to community needs.
4. Improving effectiveness of curriculum, courses, instruction and guidance.
5. Determining modifications needed in transfer programs.

6. Evaluating grading standards.
7. Identifying outstanding instructors and counselors.
8. Evaluating the effectiveness of entrance requirements.
9. Evaluating the effectiveness of placement services.
10. Measuring the effect of extracurricular activities on student development.
11. Measuring the value of orientation programs.³⁶

Scope of Evaluation

Byram believes that all curriculum with vocational objectives should be evaluated--not just those funded by federal monies. He also believes that all students should be involved in the evaluation regardless of whether or not they are employed in the area of their vocational training. He says that there is a need to emphasize ". . . those subjects that contribute most of preparing a person for work."³⁷ In this evaluation Byram includes not only the formal classes but also all the educational activities that contribute to the occupational objectives of the individual.

O'Connor lists three basic concepts of follow-up studies. He says they:

1. Clarify what the college is attempting to do.
2. Identify the important tasks in its activities.
3. Evaluate the effectiveness of its programs and efforts.³⁸

³⁶O'Connor, op. cit.

³⁷Byram, op. cit.

³⁸Reynolds, op. cit.

According to Reynolds, evaluation involves not only the curriculum but also the professional guidance and services, the physical facilities, the placement service, the program's philosophy and objectives, the administration and supervision, the teachers, the instruction and the laboratory management.³⁹ Every element of the program should be exposed to the evaluation process.

Types of Evaluation

Several educators broke down the systems of evaluation into process and product evaluation.⁴⁰

Process evaluation is defined by Ward as ". . . examining and judging the educational experiences and environment that a student processes through in a training program."⁴¹ Most educators believe as Byram does that the "input or process has to be considered, too, to determine whether there are ways in which the process could be improved so as to get a greater or better product."⁴²

Wihry feels that the worth of process evaluation is debatable because it is usually based on rating scale of questionable validity. But recently it has become more popular as better validation makes for

³⁹Reynolds, op. cit.

⁴⁰Spies, op. cit.

⁴¹Ward, op. cit.

⁴²Harold Byram and Marvin Robertson, "A Manual for Administrators, Teachers, and Citizens," third edition, East Lansing: College of Education, Michigan State University, March 1970.

greater accuracy.⁴³ Wood used this system and preferred the 1-9 point rating scale.⁴⁴

Product or outcome evaluation is probably a greater concern to more people than is the educational process. "The basic concern of people . . . is whether they are getting what they hope to from the programs, and whether this is worth what they are putting into them. . . ."⁴⁵ The end result of most evaluations is to improve the product or graduate students who are better prepared.

However, there is little or no evidence to indicate even a weak correlation between the process and product in occupational education."⁴⁶ In fact, most state evaluators and accreditation agencies emphasize the methods of conducting a program. The accrediting agencies follow a four point program.

1. They publish the standards by which they will judge quality.
2. They send capable educators to inspect the training institutions.
3. They approve and include on their lists only those schools which satisfactorily meet the standards.
4. They revisit and re-evaluate the institutions periodically

⁴³David F. Wihry and James A. Wilson, Planning in Vocational-Technical Education, A Pilot Study, Maine University, Maine State Department of Education, Augusta, Maine, April 1971.

⁴⁴Eugene Wood. Post High School Agricultural Programs in Illinois, Publication No. 32, Southern Illinois University, Carbondale School of Agriculture, January 1969.

⁴⁵Byram, op. cit.

⁴⁶John Coster and Loren A. Ihnen, "Program Evaluation," Review of Educational Research, 38:429-430, October 1968.

and remove from their lists any institution that fails to meet their standards.⁴⁷

Whinfield details three types of evaluation studies that can be used but states that the simple quantitative or descriptive studies have little value for the decision maker.⁴⁸

Review of Related Studies

The following nineteen studies are reported in the order of their similarity to the author's study, the most similar reported first. The studies are reported in part both individually and collectively only as they relate to this study.

In 1971, Dr. Donald Elson conducted a follow-up evaluation study of 162 former students in the Landscape and Nursery Technician Program at Michigan State University. The study also included 38 employers of former students. Elson drew the following conclusions:

1. The two major reasons given for withdrawing from the program were low grades and a desire to transfer to another college.
2. The main reason for former students continuing their education at another institution was to qualify for a better position in the nursery business or to train for a different profession.

⁴⁷ Frank O. Dickey, "Accreditation by Regional Association as a Technique for Evaluating Vocational-Technology Education Programs," National Commission on Accreditation, Washington, D.C., October 1968. (Unpublished Mimeo.)

⁴⁸ Richard W. Whinfield, "Review and Synthesis of Research of Placement and Follow-up of Vocational Education Studies," paper presented at the Sixty-third Annual American Vocational Association Convention, Boston, Massachusetts. Storrs: University of Connecticut, 1969.

3. Neither graduation from the program nor persistence in the industry is a guarantee of an increase in job satisfaction, job stability or salary.
4. The unemployment rate among former students was very low and about 50% of them were associated in nursery business.
5. The program needs a wider range of courses.
6. Both students and employers agree that competence in the area of human relations is most important.
7. Persistent former students learned most about the necessary skills in places other than at Michigan State University.
8. Employers rate the students best in the public relations area. They also rate Michigan State University program trained employees considerably better than others without formal training and with as much as four years of experience.
9. Because of the numbers of dropouts and non-persisters, Elson recommended more extensive counseling and guidance. More course guidance by instructors is also suggested, along with more guidance for the students while on placement training.⁴⁹

Steve Bolen conducted a 1965-70 Alumni Survey of the Farm Equipment Service and Sales Program. Of the 69 questionnaires returned, he found 54% of the respondents employed in the power equipment industry and 12% employed in farming. Twelve percent were also employed in non-agricultural fields, 68% of the respondents were in non-supervisory positions

⁴⁹Donald E. Elson, "An Evaluation of the Landscape and Nursery Technician Program at Michigan State University," 1971.

and the salary averaged \$6,370 with a range of \$4,110-\$12,000. Twenty-five percent of the students were earning \$10,000 or more while 57% were earning \$8,000 or less per year. Thirty percent of the respondents have had promotions since leaving the program. The majority of the respondents work in the service department. A staggering 75%, 45 of the first and second year students have had vocational agricultural courses in high school and over a third of them had work experience in the field. Placement training was a happy, worthwhile experience with a high degree of satisfaction. The beginning wage was \$1.72 per hour, and the highest wage \$1.96 per hour on a 46 hour week. There was an indication that more guidance in the placement situation would be helpful.⁵⁰

In 1963-64, Ecker did a follow-up study of the graduates of the Elevator and Farm Supply Short Course at Michigan State University. Eighty percent or 190 graduates were located. Of these, 71% were employed in the industry and 20% of them were in management positions. In 1964, starting salaries of graduates ranged from \$4,000 to \$5,200 and placement training wages ranged from \$1.25 to \$1.75 per hour. About 67% of those starting the course completed it. Ecker believes that the industry could absorb three times the number of graduates which it now does.⁵¹

⁵⁰Steven Bolen, "1965-1970 Alumni Survey, Farm Equipment Service and Sales Program," staff study. East Lansing: Department of Agricultural Engineering, Michigan State University, 1970.

⁵¹Harold Ecker, "Follow-up of the Elevator and Farm Supply Graduates," staff study. East Lansing: Institute of Agricultural Technology, Michigan State University, 1962.

The Iverson study in 1968 had as its purpose to determine the current employment status of 55 graduates of agricultural technology programs, one being horticulture, in Ohio. Iverson reported seven factors correlated with technical school success as determined by the students' grade point average, G.P.A.

The most important factors were:

1. High school G.P.A.
2. I.Q.
3. Class rank.
4. English grades.

One year after graduation from the program 24 respondents, 79% of the students, had had only one job and 75% of them were satisfied with that job. Eighty-three percent were satisfied with the program. All the horticulture respondents thought that supervised occupational experience should be included in the program. In job skills all employers rated the students above average and adequately prepared and 66% of the employers would hire other placement students. The skill reported by employers as most lacking in students was English. Upon graduation most students took training related jobs.⁵²

In 1966 Wood studied 215 students in agricultural education programs in five junior colleges in Illinois. Only one of these schools had a graduating class that year. The purpose of the study was to evaluate quality of the preparation of post high school agricultural

⁵²Maynard Iverson, Vincent J. Feck and Ralph E. Bender, "Student and Program Characteristics of Technology Agriculture Programs in Ohio," Research Studies in Agricultural Education, April 1970.

graduates in Illinois. The 26 respondents of the graduating class rated placement training as the most valuable part of their program.

The other conclusions of the study were:

1. Students in the lower half of their high school class could succeed in vocational education programs.
2. Students were most influenced to enter the program by their parents, vocational education teachers and their guidance counselors, in that order.
3. Students were rated average in initiative, judgment and leadership and high in personal traits such as courtesy and cooperativeness by their employers.
4. Ninety-two percent of the students would be acceptable as permanent employees, as indicated by their employers.
5. Students either very high or very low academically tended to drop out of the program. Stated reasons were: (a) transfer to a four year program and (b) low grades.⁵³

O'Connor showed little correlation between any student characteristics and dropouts but he did list five attitude areas which seem to be determining factors for dropouts.

1. Motivation.
2. College culture.
3. Level of aspiration.

⁵³Eugene Wood, "An Evaluation of Illinois Post-High School Educational Program in Agriculture." Carbondale: School of Agriculture, Southern Illinois University, September 1967.

4. Family relationships.
5. Socioeconomic status.⁵⁴

In a recent study by Judkins⁵⁵ concerning the two graduated classes in the new two year Norfolk Botanic Gardens, some interesting facts come to light:

1. Starting salaries of graduates ranged from \$5,000 to \$7,500.
2. Blue-collar workers need to be accorded more prestige.
3. More high-school vocational counselors are needed to guide students into work areas for which they are best suited.
4. The vocational counselors need to develop a better appreciation for the blue collar professions.

Judkins also brought out some more interesting statistics.

1. High school graduates' average annual income at retirement (age 65) is \$8,148.
2. One to three years of college increases this average to \$9,397.
3. College graduates earn an average of \$12,418.
4. Five or more years of college training bring the average up to \$13,555.

At retirement age of 65:

1. High school graduates earn \$374,808 after 46 years.
2. College graduates earn \$521,556 after 42 years.

⁵⁴O'Connor, op. cit.

⁵⁵Wesley P. Judkins, "Opportunities for Blue-Collar Workers in Horticulture Are Real and Expanding," Florist Review, 46, January 14, 1971, pp. 25-45.

Therefore a college education is worth at least \$146,748 more than a high school education, and a vocational school education should bring an annual income of about \$10,000 or \$81,556 more than high school graduates at retirement age.

A national survey conducted by the U.S. Office of Education in 1966 and covering 606,872 students, discovered that 80% of all graduates available for placement were placed in jobs for which they had been trained, or in a related occupation. Agricultural placement 67% was lower.⁵⁶ This compares with 54% reported in a New Mexico study of four post-secondary vocational schools.⁵⁷

One of the major problems in occupational training programs is occupational counseling--counseling related to finding and keeping a job. In studies by Mallison⁵⁸ and Eninger,⁵⁹ and that of the Oklahoma State Department of Vocational-Technical Education,⁶⁰ there are strong indications that students need more and better vocational counseling with emphasis on placement training.

⁵⁶Little, op. cit.

⁵⁷New Mexico State Department of Education, "New Mexico Area Vocational School Follow-up Studies," Sante Fe, Research Coordinating Unit, Vocational Education Division, August 1968.

⁵⁸George G. Mallinson, "Characteristics of Non-College Vocationally-Oriented School Leavers and Graduates." Kalamazoo: Western Michigan University, February 1968.

⁵⁹Max U. Eninger, "Report on New York State Data from a National Follow-up Study of the School Level Trade and Industry Vocational Graduates." Pittsburgh: Educational Systems Research Institute, May 1967, pp. 18, 21, 22, 24 and 25.

⁶⁰Oklahoma State University, "Vocational-Technical Student Survey: Enrollment and Follow-up Procedures." Stillwater: Department of Vocational Technology Education, 1968.

Most educational institutions do become involved in the job placement situation to some extent. In Eninger's study,⁶¹ 30% of the graduates found jobs through the institution as compared to 20% through the Kenosha Technical Institute study.⁶² In both studies, more jobs were located through friends or relatives than through the educational institutions, 37% and 40%, respectively.

In the New Mexico State Department of Education follow-up, over 72% of those finding jobs found them in their home community.⁶³

Graduates of two-year technical programs achieved the same results as graduates of two-year college academic programs in the world of work, according to Whinfield.⁶⁴ Eninger's study showed that salary-wise vocational graduates started behind but caught up and surpassed the academic graduates.⁶⁵

In the five and ten year follow-up studies of the graduates of Connecticut's 14 technical schools, the earnings of the graduates were above the average for the state. Only 1.5% were unemployed and 2%-15% of the graduates moved into management or became self-employed with the passage of time. The earnings of the 1958 class after five years of work was \$5,746, and \$7,085 after ten years.⁶⁶

⁶¹Eninger, op. cit.

⁶²Kenosha Technical Institute, "Graduate Report, 1967." Kenosha, Wisconsin: The Institute, 1967.

⁶³New Mexico State Department of Education, op. cit.

⁶⁴Whinfield, op. cit.

⁶⁵Eninger, op. cit.

⁶⁶"Five and Ten Year Follow-up Study of Connecticut State Vocational-Technical Schools Graduates of Classes of 1958 and 1963," March 1969.

Carroll and Ihnen's study in 1966 indicated that graduates of post-secondary vocational schools substantially improve their earning power over high school graduates in an academic program. The difference was significant enough to justify the extra expense. On initial employment, Carroll stated that vocational graduates earn \$11 more per month than academic graduates and within four years, they earn \$107.00 more per month. The vocational graduates also worked 2.7 fewer hours per week and had more fringe benefits.⁶⁷

In a less expansive study, Corazzini⁶⁸ concluded that the extra cost of post-secondary vocational training was not reflected in high graduate wages. He was the only author in this review who took this position.

Along with higher wages for vocational graduates, Eninger⁶⁹ discovered a higher degree of student job satisfaction than with non-vocational graduates. Satisfaction was also higher with those placed in jobs for which they received training. The study concluded that job satisfaction increases with job progression and promotions.

In a vocational high school study of 1,780 graduates (42% vocational student), it was determined that:

1. After graduation, vocational graduates received more and

⁶⁷Adger B. Carroll and Loren A. Ihnen, "Costs and Returns of Technical Education: A Pilot Study. Raleigh, North Carolina: Department of Economics, North Carolina State University, July 1966.

⁶⁸Corazzini, A. J. "Vocational Education: A Study of Benefits and Costs." Princeton: Industrial Relations Section, Princeton University, 1966.

⁶⁹Eninger, op. cit.

faster wage increases while starting at the same salary as academic graduates.

2. They have fewer periods of unemployment.
3. The extra cost of their education was justified.
4. Less than one-half of the graduates went into the field of their training.⁷⁰

⁷⁰Jacob J. Kaufman and Morgan Lewis. "The Potential of Vocational Education: Observations and Conclusions." University Park: Institute for Research on Human Resources, Pennsylvania State University, May 1968.

CHAPTER III

METHOD OF CONDUCTING THE STUDY

In this chapter, the survey's population, data sources, questionnaires and procedures for gathering data are covered. The study involves both former students and their floral industry employers.

Survey Population and Sources of Data

The population included only those former students of the Commercial Floriculture Technical Program who completed two or more terms of academic work in the class of 1964, 1965, 1966, 1967 or 1968.

In June and July, 1972, a phone survey was conducted to locate all former students. The student records in the Agriculture Technology office and those of the program coordinator were used as a base. The purposes of this survey were to develop an updated mailing list, inform the students about the forthcoming study, enlist their cooperation with it, and find answers to some basic demographic questions. The answers to the questions were used to design a shorter and more appropriate questionnaire, one relating directly to the status of the student. If the student was in service, the phone surveyor spoke to one of his parents. An accurate mailing list of 108 students was developed. Thirteen students were not located at that time.

On March 31, 1973, an information update letter was sent to all potential former student respondents. A copy of this letter may be seen in Appendix D. The purpose of this letter was to update the mailing list inexpensively and to alert the students to the forthcoming questionnaire. Of 125 letters sent, 36.09% of them were returned. To those not responding to this first letter, an identical second one (Appendix E) was sent ten days later. It was printed on blue stationery and included a personal note penned by Dr. Harold Ecker. Eighty-five letters were sent, with an 81.17% response, bringing the total response to 88%.

Between April 15th and 21st, 1973, all former students who had not responded to the update letter were phoned and asked the information that was requested in the letter. This was also the time period when the many difficult to locate "lost students" were finally found. Thanks to the U.S. Post Office, high school principals, parents, friends, relatives and previous employers of the former students, only one student, a Canadian, was not located. Another student asked that she not be involved in the survey. This set the population at 121 possible students.

Due to their small numbers, it was decided not to include the production option students in this survey; only retail or retail-production oriented students would be included. This reduced the student population to 99 former students.

The following table categorizes the final survey population.

TABLE I
Former Student Population

Population	Number	Percent of Usable Population
Employed	71	50.30
Self-employed	11	7.95
Military Service	3	2.25
College students	4	3.00
Unemployed	10	7.20
Housewives (8)		
Not working (2)		
	<u>99</u>	
Floral Industry Employers	<u>41</u>	<u>29.30</u>
	140	100.00
Miscellaneous population		
Unlocatable	1	
Didn't want to be involved	1	

Forty-one former students listed the name, address and phone number of their employers who subsequently became part of the survey. Several of these employers had combination retail-production outlets, but the great majority were retail florist shop owners.

Questionnaire Construction and Use

Three different questionnaires were sent to the three different categories of respondents: persistent former students, non-persistent former students and flower industry employers of former students.

There were five color coded sections in the questionnaires. The persistent former students received yellow, pink, green and white sections. The non-persistent former students received all of the above with the exception of the yellow section. The employers received only a blue section. The color keyed section system was used to make data processing easier and create the illusion of a shorter instrument for the respondents.

The instruments were prepared using the many questionnaires found in the literature research and in consultation with several staff members in the Department of Secondary Education, Horticulture and the Institute of Agriculture Technology at Michigan State University. Five local retail florists and the author's major professor also were advisers on the construction and content of the questionnaire.

The initial instrument was revised several times before it was tested. It was tested April 23-26th for clarity and completeness of both direction and content by seven former commercial floriculture

technical students, all of whom had graduated within the last two years, and by one outstanding four-year floriculture student. Appendix F lists the students.

The instrument was also tested by the managers or owners of six retail or retail-production flower shops in the Lansing and Flint, Michigan, areas who previously employed or now employ former floriculture students. However, none of them employ graduates of the classes of 1966-70. After being tested by these two groups, the instrument underwent its last revision.

The yellow section of the instrument, which was sent only to persisters, consisted of three parts: (a) 21 skills and competencies related to floral design; (b) 28 skills and competencies related to flower shop management and (c) section on skills lacking. The list of skills and competencies was compiled in consultation with five of the local retail florists, from the personal experience of the author and from the work of Oen,⁷¹ Elson,⁷² and Berkey.⁷³

The former students were requested to answer two questions in regard to each of the 49 skills or competencies listed. They were to rate the importance of each skill to their present job and to designate the place they learned most about each skill.

⁷¹Urban T. Oen, "Employment Opportunities and Needed Competencies in Selected Nursery, Turfgrass, Arboriculture, and Landscaping Businesses in the Lansing, Michigan, Area," September 12, 1969.

⁷²Elson, op. cit.

⁷³Arthur L. Berkey and William E. Drake, "An Analysis of Tasks Performed in the Ornamental Horticulture Industry." Ithaca: College of Agriculture and Life Sciences, Cornell University, June 1972.

The pink sheet was sent to all former students and was designed to gauge the value the students placed on eight program and extra-curricular activities. A space was also left for comments.

The green section too was sent to all former students. Its purpose was to determine how they felt about certain elements in the program, and what their understanding of and relationship to the floral industry was. The first questions were answered by the use of a ranking scale. The student had the option of ranking each statement with a: 1. Dis-liked, 2. Feel Neutral, 3. Liked a Little, or 4. Liked Very Much. With the second group of questions the students were asked to rank each statement with a: 1. Not Involved, 2. Slightly Important, 3. Considerably Important, or 4. Extremely Important.

The white Job History section was sent to all former students also. Its purpose was to trace the students' movements both horizontally and vertically in the world of work. In this section the students had four questions to answer relating to each job since leaving Michigan State University. They concerned the students:

1. Job titles.
2. Dates of employment.
3. Starting and ending salary.
4. A ranking of the reasons for leaving the job.

The blue Employer Questionnaire was divided into three sections. The first part was basic background information concerning the florist's business and his history of working with placement students. It also asked for an evaluation of the students' performance as compared to his

experience with non-student employees. The last section lists the same 49 skills and competencies as in the persisters' questionnaire and asks two questions of the employer. It asks for a rating of the importance of each skill to the performance of the employee's job and for an evaluation of the employee's performance of each skill.

Securing the Data

With a tested instrument and with a complete mailing list, a schedule was established for sending out the questionnaires. However, the original schedule was changed several times when it was deemed practical. The actual schedule adhered to was as follows:

- | | |
|-------------------|------------------------------|
| a) April 30, 1973 | 1st Questionnaire mailed out |
| b) May 22, 1973 | 1st Reminder letter sent |
| c) June 1, 1973 | 2nd Questionnaire sent |
| d) June 15, 1973 | 2nd Reminder letter sent |
| e) June 26, 1973 | 3rd Reminder letter sent |
| f) June 28, 1973 | Thank you letters sent. |

A more detailed explanation of each mailing follows:

a. The first questionnaire was sent to 140 students and employers. An enclosed cover letter stressed the importance of this survey and urged a speedy reply. The instrument was sent to the following three categories of people:

- 59 persistent former students.
- 40 non-persistent former students.
- 41 employers of former students.

Each questionnaire was complete with a self-addressed stamped return envelope for the respondents' convenience. See the following appendices for their respective cover letters and questionnaires.

- Appendix G The Persistent Former Student's Cover Letter.
- Appendix H The Persistent Former Student's Questionnaire.
- Appendix I The Non-Persistent Former Student's Cover Letter.
- Appendix J The Employers' Cover Letter.
- Appendix K The Employers' Questionnaire.

b. Ninety-one First Reminder letters were sent to both employers and former students. The letters stressed the importance of the study and the value of the respondent's opinion. It also mentioned the ease with which the questionnaire could be filled out. See Appendix L for a copy of the student and employer's reminder letter.

c. A total of 74 Second Questionnaires were sent to 45 former students and 29 employers of former students. Again there was a cover letter and an enclosed self-addressed stamped return envelope for their convenience. See Appendix M for former student cover letter and Appendix N for employer's cover letter.

d. Each of the 48 non-respondents was sent an identical Second Reminder letter. It was sent in a bright red non-business envelope with a bright green mimeograph reminder sheet enclosed. There was also an enclosed hand written note on "Snoopy" stationery. The envelope was stamped with a large very bright colored stamp. See Appendix O for a typical "Snoopy" note and the green enclosed reminder.

e. A Third Reminder letter was sent to each of the 28 non-respondents, 16 students and 12 employers. Everyone received the same non-business blue letter. The theme of the letter was, "Your Opinion Is Worth More Than Two Cents To Us." Three shiny pennies were glued inside the letter. See Appendix P for a copy of the letter.

f. Thank you letters were sent to every respondent expressing appreciation for answering the questionnaire. A copy can be found in Appendix Q. Additional letters were sent out as questionnaires were received.

Processing of the Data

Each page of each questionnaire was numbered and lettered to coincide with the identification system used on the 3 x 5 index card mailing list. The letters on each questionnaire page identified the former student as a persistent or non-persistent graduate or dropout. The number at the top of page identified the student by the year he enrolled in the program. With this system questionnaire sections could be separated and like pages could be more easily tabulated.

The majority of the tabulations were percentages, averages, means, or totals. A desktop electronic calculator was used to compute the numbers. In the employer and employee "skill" section the responses were coded, programmed, and "run-off" by the computer.

It is hoped that the information handled in this manner will be usable, understandable and appropriate to the needs and desires of potential users.

CHAPTER IV

PRESENTATION OF THE FINDINGS

The data presented in this chapter were gathered from both the follow-up questionnaire of former students and their employers and from the many mail and phone contacts with them.

Population

To be included in the study, former students must have completed two or more terms of class work in the entering class of 1964, 1965, 1966, 1967 or 1968. The maximum population possible was 99 former students and 41 employers. Eleven students either did not respond to the questionnaire, couldn't be located or didn't want to be a part of the survey. Therefore, the actual former student population was 88. Their names and addresses are listed in Appendix R.

Two former students who were teaching floriculture in vocational technical schools were considered persisters as was a man who enlisted in the service while employed in a floral industry job.

Forty-one persistent former students provided the names of their employers. Nine employers did not return their questionnaires leaving an employer population of 32. Their names and addresses are listed in Appendix S.

Data presented in Table II reveal the number of students who entered the program from 1964 to 1968. It also lists the students by category: Persistent Dropout or Graduate and Non-Persistent Dropout or Graduate. In each alternate year enrollment jumps, without any apparent reason.

Table III is a further breakdown of Table II, listing the four categories of students in the total five year period of this survey. Of the former students 68.68% graduated from the program as compared to 31.32% who did not. Of the former students 59.59% persisted in the industry, while 40.41% left the floral industry.

Telephone Interviews

All former students were surveyed by phone in June and July of 1972. The purpose of this interview was to gain basic information such as the student's home and work address and phone number and his place and type of employment. In addition to providing a current mailing list it also divided the former students into the categories listed in Tables II, III and IV. The largest category of students was the persistent graduates with 47.47% of the total followed by 21.21%, non-persistent graduates, 19.19% non-persistent dropouts and 12.12% persistent dropouts.

With the exception of the entering class of 1968, the larger the class, the smaller the dropout rate and vice versa. For example, the class of 1966 with 23 students, had a dropout rate of 17.3% while the class of 1967, with 16 students, had a dropout rate of 31.2%.

TABLE II

The Year Former Students Entered the Commercial Floriculture Technician Program

Year	Former Student Categories								Total	
	Persistent Dropouts		Persistent Graduates		Non-persistent Dropouts		Non-persistent Graduates			
	N	%	N	%	N	%	N	%	N	% *
1964	2	8.33	10	41.67	4	16.67	8	33.33	24	24.24
1965	2	14.29	8	57.14	2	14.29	2	14.29	14	14.14
1966	2	8.70	11	47.83	4	17.39	6	26.09	23	23.23
1967	3	18.75	7	43.75	2	12.50	4	25.00	16	16.16
1968	3	13.64	11	50.00	7	31.82	1	4.55	22	22.22
Total for Category	12	100.00	47	100.00	19	100.00	21	100.00	99	100.00

*Percent of 5 year total of students.

TABLE III
Categories of Former Students

Former Student Categories	N	Percent of Population
Persistent Graduates	47	47.47
Persistent Dropouts	12	12.12
Non-persistent Graduates	21	21.21
Non-persistent Dropouts	19	19.19
Totals	99	100.00%

The non-persisters are occupationally scattered with no one dominant profession or industry represented. However, of the 23 former students, only one works in a factory, while everyone else works in some type of light industry. After completion of the phone interviews with the resulting stabilization of student numbers, the author decided, in consultation with Dr. H. Ecker, Chairman of the Agricultural Technology Institute at Michigan State University, to include only retail oriented students in this study. This decision was made because in the five year period covered:

1. 74.4% of the graduates were retail oriented.
2. 74.6% of the dropouts were retail oriented.
3. Only 38 of the total of 149 graduates and dropouts were production oriented. This was too small a number when divided by the five years of the study to produce significant results.

The data found in Table IV was compiled after the phone interviews and before it was decided not to use the production related students in this survey. The data in Tables V through X include only retail oriented students, both those who responded to the questionnaire and those who did not.

Of those that have dropped out, 65% have done so by the end of the second term of classes. The causes for dropouts (18% of the total entering classes) were as follows:

TABLE IV

Numbers of Students Entering, Dropping Out and Graduating From the Commercial Floriculture Technician Program Between 1964 and 1968, Including Production and Retail Majors

Year Enrolled	N Entered	M.	F.	N Grad.	Grad.	Males Grad.	Females Grad.	N	DROPOUTS		Totals After Term of Classes			
									N A-S	N M A-S	1st	2nd	3rd	4th
1964	30	20	10	21	70	55	100	9	2	2	1	2	1	5
1965	26	22	4	15	57	59	50	11	7	5	6	1	2	2
1966	33	19	14	18	54	47	64	15	5	1	6	4	4	1
1967	28	13	15	16	57	61	53	12	7	2	6	3	-	3
1968	32	18	14	16	50	61	35	16	7	2	6	6	1	3
TOTALS	149	92	57	86	57	56	59	63	28	12	25	16	8	14
AVERAGES														
Entering Class Size	N Male	N Female	N Grad.	% Grad.	% M Grad.	% F. Grad.	% Drop.	% A.S*	% M A.S.	Leave Program After Terms of Classes				
										1st	2nd	3rd	4th	
29.8	18.4	11.4	17.2	57	56	59	43	18 entering 44% Drop.	13 42%	25 40%	16 25%	8 12%	14 22%	

*A-S Academic Suspension

Grades	28 students or 44%
Transfers	14 students or 22%
Unknown	12 students or 19%
Placement or Credit	5 students or 8%
Health or Marriage	3 students or 5%
Army	<u>2%</u>
	100%

Of the 149 entering students in this five year period: (1) 86 students, 57% of the entering class, graduated; and (2) 63 students, 43% of the entering class, didn't complete the program. Of those not completing the program: (a) about half, 44%, left due to academic suspension (about one-half of these were males); and (b) 22% of the dropouts transferred to the four year Horticulture program or to another college at the university--8% of all enrollees transferred to a four year program.

It is noteworthy that the average entering class size was almost 30, but the average size of the graduating class was 17 with an average loss of 13 students yearly. In other words, 57% of all entering students graduate. Fifty-nine percent of the females graduated as compared with 56% for males.

After the phone interviews before it was decided not to use the production related students in the survey, the data found in Table V was compiled.

TABLE V

Employment Status of the Former Students of the Commercial Floriculture Technician Program of the Entering Classes of 1964, 1965, 1966, 1967, and 1968 as of June 1, 1973

N	OCCUPATIONS
A.	<p>71 Employed</p> <p>48 Floral Industry</p> <p>34 Full-time floral designers</p> <p>8 Part-time floral designers</p> <p>2 Teaching floriculture in Vocational Technical schools</p> <p>4 Retail flower store managers</p> <p>23 Non-floral Occupations</p> <p>3 Office work</p> <p>2 Cosmetics salesmen</p> <p>2 Bank tellers</p> <p>1 Irrigation equipment salesman</p> <p>1 Waiter</p> <p>1 Department store sales manager</p> <p>1 Department store buyer</p> <p>1 School bus driver</p> <p>1 Waitress</p> <p>1 Computer testing service work</p> <p>1 Airline reservation hostess</p> <p>1 Manufactures spark plugs</p> <p>1 Asst. Mgr. fabric company</p> <p>1 Clerk fabric shop</p> <p>1 Life insurance salesman</p> <p>1 Bell telephone company lineman</p> <p>1 Plumber</p> <p>1 Male nurse</p> <p>1 Elementary education teacher</p>
B.	<p>11 Self Employed</p> <p>10 Floral Industry</p> <p>1 Grocer</p>
C.	<p>4 College Students (Non-persisters)</p>
D.	<p>3 Military Service (2 Non-persister)</p>
E.	<p>10 Unemployed (Non-persisters)</p> <p>8 Housewives</p> <p>2 Not working</p>
99	<p>1 student was unlocatable</p> <p>1 student did not want to participate in the survey</p>

Table V is the complete employment picture of all the graduates and dropouts (retail oriented) of the classes entering the program in 1964, 1965, 1966, 1967 or 1968. Of the former students 58.58% were employed in the floral industry and 23.23% were employed in non-floral occupations. Eleven or 11.11% are self-employed and only two former students are actually unemployed. The persistent rate mentioned above is consistent with that mentioned in other studies previously reported. Other vocational technical studies also mention the low unemployment rate for former students.

Table VI is different from Table V in that it includes only the data from 30 employer questionnaires. It is significant to note that of the 30 employees, 18, or 60% have management responsibilities. Although it is not reported in the table, many of the 12 designers also have major management responsibilities.

According to Table VII, 55.71% of the graduates of the entering classes of 1964-1968 were males; 62.96% of all the dropouts also were males but then 69.64% of the entering males and 77.50% of the entering females graduated from the program. So, the percentage of females who completed the program and graduated is 7.86% higher than the percentage of males who started and completed this program.

TABLE VI
Positions Presently Held by Former Students of the
Commercial Floriculture Technician Program*

Title of Position	Number of Students	Percent of Students
Store Manager	5	16.67
Assistant Manager	8	26.67
Department or Section Manager	5	16.67
Decorations Dept. 1		
Wedding Dept. 1		
Retail Dept. 1		
Cut Flower Dept. 1		
Floral Designers	12	40.00
TOTALS	30	100.00

*According to 30 usable employer responses.

TABLE VII

Ratio of Male to Female Graduates and Dropouts In the
Commercial Floriculture Technician Program
Classes of 1964 Through 1968

Year Enter Program	GRADUATES					DROPOUTS				
	Male		Female		TOTAL	Male		Female		TOTAL
	N	%	N	%	N	N	%	N	%	N
1964	9	52.94	8	47.06	17	6	100.0	0	0	6
1965	9	90.00	1	10.00	10	3	75.00	1	25.00	4
1966	7	70.00	10	58.82	17	4	66.67	2	33.33	6
1967	6	50.00	6	50.00	12	2	66.67	1	33.33	3
1968	8	57.14	6	42.86	14	2	25.00	6	75.00	8

According to the data in Table VIII dropouts have a slightly better point average than the program graduates. This fact is in accord with the findings reported in the literature review which stated in essence that the students with the highest and lowest G.P.A.'s usually leave vocational programs. A major reason for the high G.P.A. students dropping out is their transfer to a four year academic program. A major reason for the low G.P.A. students dropping out is academic suspension.

There is a significant difference between the number and percent of students from families in the florist industry who persist in the floral industry and the overall persistence rate amongst all former students. The difference is 29.94% or almost one-third higher. Even though only 59.25% of the students growing up in the florist industry graduate from the program, 85.19% remain in the industry of their parents. Three of the non-graduate persisters completed all the requirements for graduation except placement training and two more transferred to the four year horticulture program at Michigan State University. Of the four non-persisters, one is studying law, one is studying business, one is selling cosmetics, and the other is selling irrigation equipment.

The data on Table X clearly indicate almost 15% more male students persist in the floral industry than do female former students. This is even more significant when considering the fact that of the 22 female persisters, seven (31.82%) are only working part-time, whereas only one male is working on a part-time basis.

TABLE VIII

Relationship of Agricultural Technician Grade Point Averages
to the Various Categories of Former Students

Student Category	N	Grade Point Average
<u>GRADUATES</u>	68	2.56
Persisters	47	2.48
Non-persisters	21	2.64
<u>DROPOUTS</u>	27	2.61
Persisters	8	2.91
Non-persisters	19	2.31
<u>PERSISTERS*</u>	55	2.69
Graduates	47	2.48
Dropouts	8	2.91
<u>NON-PERSISTERS</u>	40	2.45
Graduates	21	2.64
Dropouts	19	2.31

*Four former students' G.P.A.'s were not available.

TABLE IX

Comparison of the Persistence Rate of Students
from Florist and Non-Florist Families

Students From Florist Families	Program Graduates		N Full-Time	N Part-Time	Total N	Total %	Persistent Rate for All Former Students
	N	%					
27	16	59.25	5	18	23	58.19	59.60

TABLE X

Comparison of the Persistence Rate Between
Male and Female Former Students

Total Former Students--99				Persisters--59				Non-Persisters--40			
Male		Female		Male		Female		Male		Female	
N	%	N	%	N	%	N	%	N	%	N	%
56	56.56	43	43.43	37	66.07	22	51.16	19	47.50	21	52.50

The reason for the difference in the persistence rate between the sexes may be that the male is more concerned about his vocational choice and once that choice is made, is less apt. to change.

Questionnaire Responses

Following both the telephone interviews and the mail contacts, the tested questionnaires were mailed to 140 former students and employers. There were 119 or 85% of the questionnaires returned. Table XI reveals the schedule which was followed in the distribution of both questionnaires and reminder letters. Due to the mail handlers' strike and the survey deadlines, the last mail reminder letter was ineffective. Six questionnaires were returned too late to be used.

The most effective mailing response was to the unique and colorful one with the "Snoopy" stationery--a 45.83% response. The next most effective response was to the first questionnaire, 42.86%.

Of all the respondents, 91.49% were persistent graduates, although 85.71% of the non-persistent graduates also responded to the questionnaire. The least response, 75%, was from the persistent dropouts.

TABLE XI

Responses to Mailings of Questionnaires and Reminder Letters

Date Material Sent	Type of Material Sent	Number of Copies Sent	Number of Copies Received	Total Number of Responses	Responses: % of Each Mailing	Responses % of Total	Responses Total %
April 30, 1973	First Question- naire	140	60	60	42.86	42.08	42.08
May 22, 1973	First Reminder Letter	91	11	71	12.09	7.86	49.93
June 1 1973	First Reminder Question- naire	74	26	97	35.14	18.57	68.50
June 15, 1973	Second Reminder Letter	48	22	119	45.83	15.71	85.00
June 26, 1973	Third Reminder Letter	28	*				

*Received six questionnaires too late to be included in the study.

Student Educational Activities

This section of the Findings is data from the pink section of the questionnaire which was sent to all former students. It attempts to respond to the study's objectives: #7 and #8 and hypothesis #4 as listed in the Introduction. The objectives and hypothesis are as follows:

7. To determine which educational activities the former students participated in.
8. To determine the educational contribution that former students felt they received from each of the eight listed school activities.

Hypothesis 4. There will be high correlation between former students' persistence and their participation in the listed educational activities.

The data in Table XLII and XLIII indicates a very good degree of participation in educational activities. More students (83 or 93.18%) were involved in the Floral Industry Conventions than in any other activity. The same percent of students 88.64, were involved in both the Fall Mum Sales and Class Field Trips. The Bridal Show was ranked the most beneficial by 50% of the students, followed by the Annual Spring Field Trip (45.5%), and Industry Conventions (44.3%).

The data in Tables XLIV and XLV relate directly to Hypothesis #4. There is in every case a high correlation between persistence and participation in educational activities. The least degree of correlation is in the Agricultural Technology Organizations and these organizations were only operative one of the five years covered in the survey.

TABLE XII
Responses to Questionnaires by
Former Student Categories

Student Categories	Population	Respondents	Percent Responses	Non-respondents
	N	N		N
Persistent Dropouts	12	9	75.00	3
Persistent Graduates	47	43	91.49	4
Non-persistent Dropouts	19	16	84.21	3
Non-persistent Graduates	21	18	85.71	3
Total	99	86	86.86	11

TABLE XIII

The Relationship of the Number of Full-Time Flower Shop Employees to Its Annual Volume and Location

	Number	Location of Retail Flower Shop* and Employees							
		Rural	Village or Small Town	Residential	Neighborhood Shopping Center	Large Shopping Center or Mall	Metropolitan (Large City)	Other	
		N	N	N	N	N	N	N	
\$0-\$50,000 Annual Volume									
Shops	4		1 25.00	2 50.00			1 25.00		
Full-Time Employees	5		1 20.00	3 60.00			1 20.00		
\$50,000-\$100,000 Annual Volume									
Shops	4		1 25.00		1 25.00		1 25.00	Downtown 1 25.00	
Full-Time Employees	30		3 10.00		25 83.30		1 3.30	Downtown 1 3.30	
\$100,000-\$250,000 Annual Volume									
Shops	13	1 7.70	2 15.00	2 15.00	2 15.00	1 7.70	2 15.00	Downtown 3 23.00	
Full-Time Employees	80	5 6.00	6.5 8.00	14 17.50	12 15.00	7 8.80	14 17.59	Downtown 21.5 27.00	
Over \$250,000 Annual Volume									
Shops	13			1 7.70	3 23.00	4 30.80	4 30.80	Edge of City 1 7.70	
Full-Time Employees	187			22 11.80	36 19.30	40 21.40	49 26.20	Edge of City 40 21.40	

* One firm (not included in the survey) has 6 stores, 150 employees, and a volume over \$1 million.

TABLE XIV

Relationship of Shop Size to Hiring of Former Students

Shops Annual Volume	N of Shops in Each Category	Students Hired in Last 5 Years			
		Placement Students Hired		Students Hired After Leaving Program	
		N	% of Total	N	% of Total
\$0-50,000	4	1	5.88	3	8.33
\$50,000-100,000	4	1	5.88	5	13.88
\$100,000-250,000	13	7	41.18	13	36.10
Over \$250,000	13	8	47.06	15	41.66

TABLE XV
Employer Hiring Practices for New Employees

Where Hired	% of Total Responses	Number of Responses***
Off Street, Shop Trains	38.89	21
"U"* Technical Program	14.81	8
Design Schools	9.26	5
Vocational Schools	9.26	5
"U"* 4 Year Hort. Program	7.41	4
Newspaper Ads	3.70	2
High School Work-Study	3.70	2
Recommendations	3.70	2
Employment Agencies	3.70	2
4-H Design Participants	1.85	1
FAA** Kids	1.85	1
Other Shops	1.85	1

* Michigan State University

** Future Farmers of America

*** 54 Total Responses (Many shops gave more than one method of hiring.
The larger shops of course do more hiring.)

Only 4.7% of the persisters did not participate in the Floriculture Forum--every other correlation was higher.

When the data in Table XLIV is compared with that in Table XLV it becomes apparent that many persisters participated in the activities but felt they were of little benefit. This is especially true of the Fall Mum Sales, Industry Groups and the Floriculture Forum.

Employer's Questionnaire

Forty-one employers of persistent former students were sent questionnaires, 32 responded. The purpose of these questionnaires was to learn more about their hiring practices, their locations in relation to shop size, and their degree of satisfaction with their former student employee. The employer was also asked to compare the quality and quantity of work produced by the former student and the work produced by his regular employees who have had:

1. No formal training and no experience.
2. No formal training and the same number of years experience.
3. No formal training and two years more experience than the student employee.
4. No formal training and four years more experience in the floral industry than the student employee.

The assumption in these comparisons is that the former students should compare favorably in both quality and quantity of work produced to at least the level of the untrained employee with two years more industry experience than the former student. This is comparing skills

learned in an 18-month technical program to those learned in two years of employment in a flower shop. This is comparing the program's 120 hours of classroom floral design experiences to the 2,080+ hours of floral design exposure an employee would have after he had worked in a flower shop for two years.

The last section of the questionnaire is divided into two sections. The first section asks the employer to rank the importance of forty-nine skills or competencies for the former students' present job. Twenty-one skills are related to floral design and 28 are related to flower shop management. The employer's response to this section will be compared to the former student's response to identical question later in this chapter. The employer's views as to which skills are important could also have an important bearing on which skills are taught in the Commercial Floriculture Technical Program at Michigan State University.

The last half of the previous section of the questionnaire is an evaluation of the former student's ability to perform the same 49 skills as previously noted. The employer ranks the student 1, 2, 3, or 4 as listed:

1. Little or no ability,
2. Needs improvement,
3. Satisfactory, or
4. Outstanding ability.

This section will be an indication of the success of part of the program--or the degree to which the instructional objectives of the floral design and retail flower shop management courses have been met.

The "skill" section of the employer's questionnaire is discussed in conjunction with the "skill" section in the former students' questionnaire.

The last question the employers were asked to answer is "How do you feel the Agricultural Technological Commercial Floriculture Program can be improved?" It was hoped that this question would bring a wealth of constructive ideas for program improvement.

Table XIII contains the data from the first page of the employer's questionnaire. It is basic demographic data pinpointing the location and size of the shops the former students are employed in.

Thirty-two employers responded but three have multiple shops. Two florists have two shops, which brings the total number of shops included in this survey to 34. One retailer had six shops and 150 employees. The data from his questionnaire was not included as it would completely unbalance the data from the 34 smaller shops.

Eleven percent of the responding retailers had "small" shops and most were located in small towns. These shops averaged one and one-quarter employee per location and employed a total of four former students.

The medium sized shops, \$50,000-\$100,000 annual volume, also employs four former students. The shops are not concentrated in any one size community but rather are scattered in all areas. This size shop operates with an average of 7.5 employees at each location.

The large sized shops, \$100,000-\$250,000 annual volume, employ 13 former students. About half of the shops are located in small to medium

sized population centers. The average number of employees per shop is 6.15. This is about one employee per shop less than the medium sized shop. This indicates a greater degree of efficiency in the larger shops and probably a greater amount of organization and employee task specialization.

The very large shops also have 13 former students in their employ and average 15.38 employees per populus location. Table XIV also indicates that the large and the very large shops hire 76.47% of the former students.

From the data in Tables XIV and XV it is apparent that the two smaller sized shops only hire 23.53% of the former students. They also prefer, by the ratio of 3:1 and 5:1, to hire students after they leave the program rather than hiring placement students. No doubt this is due to the fact that they do not have time to spend training a student. The larger two classes of shops hire 7.5 times more placement students than the smaller shops and hire about twice the number of graduates and program dropouts as they do placement students.

The question, "I Usually Find and Hire New Employees From . . ." is answered by the 54 responses of 32 employers. It would appear that there is no one "right" place to locate and hire new employees and must look in several places for them, as indicated in Table XV.

The majority of the new employees are hired "Off the Street." This means through a sign in the window, an ad in the paper or simply a person walking into the store asking for a job. The person usually is "green," or inexperienced and the shop must train the new employee. Of the responses, 14.81% placed the Commercial Floriculture Technician

Program second as a source of new employees. Therefore 53.70% of all new employees are hired through one of these two sources. The balance of the new employees are hired from ten other sources.

Sixty percent of the persistent former students are presently employed in management positions in retail flower shops. The degree of management responsibility varies from that of assuming the responsibility for the management of the entire shop to that of a department manager overseeing the operation of one or more areas within the retail shop. The figures in Table XVI are based on the 28 usable employer responses.

TABLE XVI
Management Positions Presently Held by Former Students

Title of Position	Number of Students	Percent of Students
Store Manager Assistant Manager or Department Manager	18	60.00
Floral Designers	<u>12</u>	<u>40.00</u>
	30	100.00

Store managers.--Store managers' responsibilities differ greatly between shops. In some situations, the manager has the entire responsibility of shop operation; in others, the owner makes the major business decisions; the manager, the minor ones. The annual salary ranges from \$6,840.00 to \$11,520.00 (based on monthly salary ranges shown in Table XVII) with additional fringe benefits. These figures do not include former students whose employers did not respond to the questionnaire.

Assistant managers.--The responsibilities of the assistant manager differ widely according to the shop size and volume and the owner's philosophy of management. In some cases the assistant manager has complete responsibility when the owner or manager is away. Generally he is the chief or head floral designer. He also has other major responsibilities and is usually being groomed for the position of store manager. Salaries for this position range from \$4,200.00 to \$8,400.00 and the mean salary is \$6,804.00. Sometimes a manager is actually an assistant manager with a strong "boss." Conversely, an assistant manager can actually be a low paid manager. In one case, a female assistant manager was paid \$4,200.00 for her major management responsibilities. Thus, titles can be deceiving.

Department or section managers.--There were five former students who are department managers, but two of their employers did not return the questionnaire. The five departments they manage are Decorations, Bridal, Design, Retail and Cut Flowers. The highest paid student department manager is the Decorations Manager who receives \$640.00

TABLE XVII
Management Salaries of Former Students

Position Held	Mean Monthly Gross Salary*	Monthly Salary Range	N Above Mean Salary	N Students	Graduates		N Dropouts
					N	%	
Store Manager	\$732.50	\$570-\$960	2	4	4	100	---
Assistant Manager	\$567.00	\$350-\$700	4	8	6	75	2**
Department or Section Manager	\$513.33	\$400-\$640	1	3	3	100	---
Designers***	\$461.00	\$320-\$640	5	10	10	100	---

* Based on a 40 hour week, 4 week month.

** The two dropouts transferred to and graduated from Michigan State University's undergraduate horticultural program.

*** Four designers are part-time (housewives). Their salaries are \$320.00 for two of them and \$400.00 and \$640.00 respectively for the other two.

per month plus bonuses and profit sharing. Salaries as well as responsibilities in this area differ widely. Salaries are determined in many ways, not all of them easy to define. Some determinants are proficiency or skill at job, job responsibilities, personality, initiative, length of time in position, and relationship to the "boss" and to the other employees.

Floral designers--Again there is a wide salary range for floral designers--from \$320.00 to \$640.00 per month. The mean salary for designers is \$461.00 per month or \$120.33 per week. The responsibilities of this position vary widely from store management to that of simply taking and filling orders without any major responsibilities. Quite often a designer has several significant responsibilities.

When comparing salaries paid to former students to the size of the shop they are employed by, the largest shops pay the highest salaries in most every category. The largest shops also offer more fringe benefits such as profit sharing, hospitalization, paid insurance, pensions, membership in civic organizations, longer paid vacations, paid conventions, and the use of a company car. These fringe benefits are not reflected in the above listed salaries. The more responsible the position, the more likely it is to offer a wider variety of fringe benefits. These observations were made from both the former students' and the employers' questionnaires.

As could be expected there is a definite salary range for each level of responsibility which can be quite useful to those vocational counselors both at high schools and at the college level. Industry organizations could also profitably use these figures.

In employer's rating of student's performance, of all the 41 employers of former students contacted in this study, which includes the non-respondents, the majority of the employers, 68.29%, were pleased with the former students. These figures assume that the non-responding employers are all dissatisfied with the students. The figures below in Table XVIII are based on the 32 responding employers.

TABLE XVIII
Employers' Ratings of Students' Job Performance

Very Satisfied		Satisfied		Dissatisfied		Very Dissatisfied		Unusable Response	
N	%	N	%	N	%	N	%	N	%
20	71.43	7	25.00	1	3.57	0	...	4	12.50

Of the responding employers, 71.43% were Very Satisfied with their former students' job performance and 96.43% were either Very Satisfied or Satisfied as shown in Table XIX. One employer was Dissatisfied with his employee. She has been in his employ for over two years.

Questions #8, 9, 10 and 11 in the employers questionnaire deal with a ranking of the former students quality and quantity of work when compared to other employees who have had no formal training and a varying degree of industry experience. The employer ranks the former student on a ten point scale from #1, inferior, to #10, superior.

TABLE XIX

Employers' Ratings of Students' Job Performance: Very Satisfied and Satisfied; Very Dissatisfied and Dissatisfied

*Rating of Student Performance			
Very Satisfied and Satisfied		Very Dissatisfied and Dissatisfied	
N	%	N	%
27	96.43	1	3.57

*Based on 28 usable employer responses. Four were unusable and 9 employers (21.95%) did not return the questionnaire.

In every case employers rated the quality of work performed by former students higher than their quantity of work. Apparently the students have yet to gain the speed, which often comes with years of experience, that the employers expect.

Even so, the employers are very pleased with both the quality and quantity of the former students' work with 87.50% of them giving the students a superior rating (a rating of 8, 9 or 10 on the scale).

When the students' performance is matched against that of employees with no formal training and the same number of years of experience, an average of 73.65% of the employers rated the students' performance superior.

When the former students' performance is compared to other employees with no formal training and two years more experience in the

industry than the student, an average of 69.05% of the employers rated the students superior.

An average of 54.41% of the employers also believed that the former students' quality and quantity of work performed was superior to the work performed by the other employees in the shop who had no formal training and who had four years more experience in the industry than the students.

The above facts reinforce the conclusions of other studies as to the value of vocational training. The trained students "catch on" faster and perform better than employees who don't have the benefit of training. Even four years of additional experience cannot compensate for the training provided in the Commercial Floriculture Technician Program at Michigan State University.

All the above comparisons as shown in Tables XX and XXI are based only on the employers' responses numbered 8-10 on the rating scale. Any number above 5 would have been "average" or better and if included, would have given the students an even higher rating.

Fifteen employers, as shown in Table XXII, 46.87%, of those responding offered thirty-one suggestions on how the Commercial Floriculture Technician Program at Michigan State University might be improved. The suggestions broke down into two wide categories: business topics with eighteen suggestions and floral topics with thirteen suggestions. The greater emphasis on business topics is logical as 60% of these employers' former student employees are involved in some phase of store management. This too is consistent with the trend

TABLE XX

Rating of Former Students' Performance by Employers

Question		Total Responses	Ratings 8-10		All Other Ratings	
How does the former student compare to other employees? Compared to employees with:			N	%	N	%
No formal training and no industry experience	Quality of Work	24	22	91.67	2	8.33
	Quantity of Work	24	20	83.33	4	16.67
No formal training and the same number of years of experience in industry	Quality of Work	19	15	78.95	4	21.05
	Quantity of Work	19	13	68.42	6	31.58
No formal training and two more years industry experience than student employees	Quality of Work	14	10	71.43	4	28.57
	Quantity of Work	15	10	66.67	5	33.33
No formal training and four more years industry experience than student employees	Quality of Work	17	10	58.82	7	41.18
	Quantity of Work	16	8	50.00	8	50.00

TABLE XXI

Complete Rating of Former Students' Performance by Employers

Question		Total Responses	Superior										Inferior			
How does the student compare with your other employees? Compared to employees with:			10	9	8	7	6	5	4	3	2	1				
			N	%	N	%	N	%	N	%	N	%	N	%		
No formal training and no industry experience	Quality of Work	24	14	58.3	5	20.8	3	12.5	1	4.2		1	4.2			
	Quantity of Work	24	9	37.5	9	37.5	2	8.4	2	8.3		2	8.3			
No formal training and the same number of years of experience in industry	Quality of Work	19	9	47.4	3	15.8	3	15.8	4	21.0						
	Quantity of Work	19	6	31.6	3	15.8	4	21.0	5	26.3		1	5.3			
No formal training and two or more years of industry experience	Quality of Work	14	5	35.7	2	14.3	3	21.4	1	7.2	3	21.4				
	Quantity of Work	15	4	26.6	1	6.7	5	33.3	3	20.0	1	6.7	1	6.7		
No formal training and four or more years of industry experience	Quality of Work	17	5	29.4	4	23.5	1	5.9	3	17.6	1	5.9	1	5.9	2	11.8
	Quantity of Work	16	4	25.0	1	6.3	3	18.7	3	18.7	1	6.3	2	12.5	2	12.5

TABLE XXII

Employers Suggestions on How to Improve the
Commercial Floriculture Technician Program at
Michigan State University

Business Topics	Number Employers Responding
Stronger emphasis on accounting	5
More management training	3
More experienced in selling	4
Greater emphasis on purchasing	2
More emphasis on Public Relations and Customer Psychology	3
More challenges are needed	1
Floral Topics	Number Employers Responding
More practical experience	3
More routine experiences	2
Experience in budgeting time and increasing speed	3
More general knowledge of flowers	1
Greater "growing" experience	2
Go back to 12 months on the job training	2

of late where there is more emphasis on business training than on floral design in the state and national conventions and in the industry periodicals. The retailers are realizing that business knowledge is the roadmap to survival.

The business topic that was mentioned most often was "A Stronger Emphasis on Business" followed by "More Experienced in Selling," and "More Management Training."

In suggestions related to floral topics, the two most suggested ways to improve the program were a need for "More Practical Experience" and "Budgeting Time and Increasing Speed." Increasing floral design speed comes only with concentrated efforts and a great deal of practice.

Two employers mentioned returning to the practice of a twelve month placement period.

Skills and Competencies

The purpose of this section of the questionnaire was to meet Objectives #1-6 and Hypothesis #2 which are listed in the Introduction but which for ease of reference are listed below.

Objectives:

1. To determine what skills were important and needed by persistent former students to perform their jobs satisfactorily, as rated by themselves and by their employers.
2. To determine where the above skills were learned as recalled by the student.
3. To determine the relative importance of the skills as rated by both the former student and his employer.

4. To determine the ability of persistent former students to perform the skills listed as rated by their employers.
5. To determine the skills or training the graduates felt they lacked upon completion of the program.
6. To determine whether or not the instructional objectives of the floral design courses were met.

Hypothesis:

2. Former students will weigh the importance of skills needed for their present job significantly different from their employers evaluation of the importance of the skills.

Objectives 1, 3, 4 and Hypothesis 2 were answered by comparing the employers and the former students' questionnaire responses. Objectives 2, 5 and 6 were answered by the questionnaire sent to 59 persistent former students.

This section of the questionnaire was basically a listing of the same 49 skills as found in employers' questionnaire. The difference was that the student had to differentiate the place he learned most about the skill. He could mark a 1, 2, 3 or 4 in the square indicating:

1. No training,
2. Training outside M.S.U.,
3. Ag. Tech. Courses,
4. Placement Training.

Twenty-one of the listed skills related to floral design and 28 related to flower shop management. Many of the skills listed in the management area are also taught in some of the other courses in the program.

Objective 5 is covered by the open-ended question at the end of this part of the questionnaire.

Objective 6, the objectives of the floral design classes, are covered in the skill listings, questions 1-21.

The data on Table XXIII is a compilation of persistent former student responses to the floral design related skills and Table XXIV is the students' ranking of importance of these same skills. When looking at these responses it is well to remember that each student had to make a value judgment every time he answered a question and everyone's value system is different.

The following skills or abilities are rated as being Critically Important in Table XXIII by persistent former students. They are ranked most to least important:

9. Ability to interpret the customers wishes design-wise.
6. Ability to design at a good speed.
13. Ability to price permanent and dried arrangements profitably.
3. Ability to design funeral arrangements.
10. Ability to recognize the importance of selling what
you're "heavy on."

Table XXIV lists the five most important skills:

12. Ability to price fresh arrangements profitably.
9. Ability to interpret the customer's wishes design wise.
13. Ability to price permanent and dried arrangements profitably.
6. Ability to design at a good speed.
11. Ability to recognize and use good color combinations.

TABLE XXIII

Importance of Abilities Related to Floral Design as Rated by
Persistent Former Students

Abilities	Not Required		Slightly Important		Considerably Important		Critically Important		Response Omitted		Mean Value
	N	%	N	%	N	%	N	%	N	%	
1	3	5.6	13	24.1	20	37.0	17	31.2	1	1.9	2.96
2	2	3.7	4	7.4	19	35.2	28	51.	1	1.9	3.38
3	3	5.6	5	9.3	14	26.0	31	57.4	1	1.9	3.38
4	2	3.7	9	16.7	18	33.3	24	44.4	1	1.9	2.93
5	3	5.6	11	20.4	22	40.7	17	31.5	1	1.9	3.00
6	2	3.7	4	7.4	15	27.8	32	59.3	1	1.9	3.45
7	2	3.7	6	11.1	18	33.3	27	50.0	1	1.9	3.32
8	3	5.6	10	18.5	25	46.3	15	27.8	1	1.9	2.98
9	2	3.7	3	5.6	16	29.6	32	59.3	1	1.9	3.47
10	3	5.6	5	9.3	14	26.0	31	57.4	1	1.9	3.24
11	0	0.0	3	5.6	23	42.6	27	50.0	1	1.9	3.45
12	4	7.4	0	0.0	14	26.0	29	53.7	1	1.9	3.51
13	3	5.6	2	3.7	16	29.6	32	59.3	1	1.9	3.46
14	3	5.6	4	7.4	16	29.6	30	55.6	1	1.9	3.38
15	6	11.1	14	26.0	16	29.6	17	31.5	1	1.9	2.64
16	1	1.9	17	31.5	24	44.4	11	20.4	1	1.9	2.28
17	3	5.6	9	16.7	23	42.6	18	33.3	1	1.9	2.75
18	4	7.4	6	11.1	19	35.2	24	44.4	1	1.9	3.19
19	3	5.6	2	3.7	27	50.0	21	38.9	1	1.9	3.25
20	3	5.6	10	18.5	28	51.9	12	22.2	1	1.9	2.93
21	2	3.7	6	11.1	25	46.3	20	37.0	1	1.9	3.19

TABLE XXIV

The Ranking of Importance of Floral Design Abilities
as Rated by Persistent Former Students

Abilities Listed	Student Rating Mean Value
12. Ability to price fresh arrangements profitably.	3.51
9. Ability to interpret the customer's wishes design-wise	3.47
13. Ability to price permanent and dried arrangements profitably.	3.46
6. Ability to design at good speed.	3.45
11. Ability to recognize and use good color combinations.	3.45
2. Ability to design home and hospital arrangements.	3.38
3. Ability to design funeral arrangements.	3.38
14. Ability to practice and appreciate the business aspect of design, that is, design profitably.	3.38
7. Ability to design with "a flair" (design creatively).	3.32
19. Ability to handle and care for blooming and foliage plants.	3.25
10. Ability to recognize the importance of selling what you're "heavy on."	3.24
18. Ability to handle and care for cut flowers and foliages.	3.19
21. Ability to recognize and use most available supplies and materials.	3.19
5. Ability to design novelty arrangements.	3.00
8. Ability to design with permanent and dried materials.	2.98
1. Ability to design corsages.	2.96
4. Ability to design wedding work.	2.93
20. Ability to recognize and use foams, fillers and preservatives.	2.93
17. Ability to recognize and use commercially grown flowers, plants and foliages.	2.75
15. Ability to plan and estimate the labor and material costs of large parties.	2.64
16. Ability to advise customers on horticultural problems.	2.28

Comparing the two listings on Table XXIV with its overlap of three abilities indicates a positive correlation between the views of persistent former students and all former students on which skills are most important.

The least important skill as reported by both persistent former students and by all students was skill number 15; Ability to plan and estimate the labor and material costs of large parties. In most shops the "boss" handles this type of work.

In Table XXV, employers rate the importance of the same abilities. For comparison purposes, their top six 'Critically Important' skills were:

12. Ability to price fresh arrangements profitably.
14. Ability to practice and appreciate the business aspects of design.
3. Ability to design funeral arrangements.
9. Ability to interpret the customer's wishes design wise.
11. Ability to recognize and use good color combinations.
13. Ability to price permanent and dried arrangements profitably.

The only addition to the two other rankings on page 82 was skill number 14, an obvious one for an employer to list as being of critical importance. The skill he named as being least important (not required) was 18; Ability to handle and care for cut flowers and foliages. The employers did rank skill #15 low in importance however, which agrees with the students' responses.

The second group of skills related to those used in the management of a retail flower shop and judged 'Critically Important' by persistent former students. The most important skills listed are:

TABLE XXV

Importance of Abilities Related to Floral Design as Rated by Employers

Abilities	Not Required		Slightly Important		Considerably Important		Critically Important		Response Omitted		Mean Value
	N	%	N	%	N	%	N	%	N	%	
1	3	9.4	4	12.5	13	40.6	9	28.1	3	9.4	2.97
2	2	6.3	2	6.3	9	28.1	16	50.0	3	9.4	3.34
3	3	9.4	3	9.4	5	15.6	18	56.3	3	9.4	3.31
4	2	6.3	5	15.6	13	40.6	9	28.1	3	9.4	3.00
5	2	6.3	3	9.4	11	34.4	13	40.6	3	9.4	3.21
6	2	6.3	-	--	12	37.5	15	46.9	3	9.4	3.38
7	3	9.4	2	6.3	15	46.9	9	28.1	3	9.4	3.03
8	3	9.4	5	15.6	14	43.8	7	21.9	3	9.4	2.86
9	1	3.1	1	3.1	10	31.3	17	53.1	3	9.4	3.43
10	2	6.3	1	3.1	12	37.5	15	46.9	2	6.3	3.33
11	1	--	-	--	11	34.4	17	53.1	3	9.4	3.52
12	2	6.2	-	--	6	18.8	22	68.8	2	6.3	3.60
13	3	9.4	1	3.1	9	28.1	17	53.1	2	6.3	3.20
14	1	3.1	1	3.1	6	18.8	22	68.8	2	6.3	3.63
15	4	12.5	3	9.4	9	28.1	14	43.8	2	6.3	3.10
16	4	12.5	5	15.6	13	40.6	7	21.9	3	9.4	2.79
17	4	12.5	2	6.3	14	43.8	9	28.1	3	9.4	2.97
18	5	15.6	-	--	11	34.4	13	40.6	3	9.4	3.10
19	4	12.5	2	6.3	11	34.4	12	37.5	3	9.4	3.07
20	4	12.5	1	3.1	15	46.9	9	28.1	3	9.4	3.00
21	1	3.1	-	--	14	43.8	14	43.8	3	9.4	3.41

- 29. Ability to successfully meet and deal with the public.
- 31. Ability to plan and think ahead.
- 42. Ability to communicate well verbally.
- 48. Ability to "get along" with other employees.
- 30. Understanding the importance of public relations.

Persistent former students rated the following skills as being most important:

- 29. Ability to successfully meet and deal with the public.
- 31. Ability to plan and think ahead.
- 48. Ability to "get along" with other employees.
- 42. Ability to communicate well verbally.
- 30. Understanding the importance of public relations.

The two groups of students' ratings compare almost exactly, something rather unusual.

The same two groups of former students also agree on the identity of the least important skill as being #27; Ability to plan advertising and promotions.

Again it is vital to compare the above two groups of former student responses to that of the employers. It is a comparison of judgments and somewhere in between the two groups of responses, the truth should be found. The order of importance of the skills as viewed by the employers are as follows:

- 29. Ability to successfully meet and deal with the public.
- 41. Ability to use the phone in a business like manner.
- 31. Ability to plan and think ahead.

TABLE XXVI

The Ranking of Importance of Floral Design Related Abilities
as Rated by Persistent Former Students and Employers

Abilities	Mean Values (Highest → Lowest)		
	Students		Employers
	Graduates	Non-Graduates	
6	3.53	3.10	3.38
12	3.53	3.40	3.60
3	3.51	2.80	3.31
2	3.49	2.90	3.34
11	3.49	3.30	3.52
13	3.47	3.40	3.20
9	3.44	3.60	3.48
7	3.42	2.90	3.03
10	3.37	2.70	3.33
14	3.30	3.70	3.63
21	3.28	2.80	3.41
19	3.21	3.40	3.07
18	3.16	3.30	3.10
5	3.05	2.80	3.21
20	3.05	2.40	3.00
1	3.02	2.70	2.97
8	3.02	2.80	2.86
4	2.91	3.00	3.00
17	2.72	2.90	2.97
15	2.56	3.00	3.10
16	2.21	2.60	2.79

TABLE XXVII

Importance of Abilities Related to Flower Shop Management
as Rated by Persistent Former Students

Abilities	Not Required		Slightly Important		Considerably Important		Critically Important		Response Omitted		Mean Value
	N	%	N	%	N	%	N	%	N	%	
23	6	11.1	7	13.0	12	22.2	28	51.9	1	1.9	3.17
24	7	13.0	4	7.4	22	40.7	20	37.0	1	1.9	3.04
25	7	13.0	8	14.8	12	22.2	26	48.1	1	1.9	3.07
26	6	11.1	6	11.1	18	33.3	23	42.6	1	1.9	3.09
27	12	22.2	11	20.4	16	30.0	14	26.0	1	1.9	2.60
28	5	9.3	10	18.5	20	37.0	18	33.3	1	1.9	2.96
29	1	1.9	1	1.9	11	20.4	40	74.1	1	1.9	3.69
30	1	1.9	3	5.6	16	29.6	33	61.1	1	1.9	3.53
31	1	1.9	--	--	15	27.8	37	68.5	1	1.9	3.66
32	--	--	1	1.9	21	38.9	30	55.6	2	3.7	3.49
33	9	16.7	10	18.5	14	26.0	20	37.0	1	1.9	2.85
34	3	5.6	7	13.0	20	37.0	23	42.6	1	1.9	3.19
35	6	11.1	5	9.3	18	33.3	24	44.4	1	1.9	3.14
36	7	13.0	7	13.0	17	31.5	22	40.7	1	1.9	3.02
37	5	9.3	14	26.0	14	26.0	20	37.0	1	1.9	2.92
38	4	7.4	10	18.5	19	35.2	20	37.0	1	1.9	3.03
39	4	7.4	7	13.0	21	38.9	21	38.9	1	1.9	3.11
40	3	5.6	4	7.4	18	33.3	28	51.9	1	1.9	3.34
41	1	1.9	6	11.1	13	24.1	23	42.6	1	1.9	3.48
42	--	--	2	3.7	16	29.6	35	64.8	1	1.9	3.62
43	--	--	8	14.8	24	44.4	21	38.9	1	1.9	3.25
44	3	5.6	12	22.2	23	42.6	15	27.8	1	1.9	2.94
45	-	--	7	13.0	23	42.6	23	42.6	1	1.9	3.30
46	5	9.3	8	14.8	13	24.1	27	50.0	1	1.9	3.17
47	1	1.9	3	5.6	18	33.3	31	57.4	1	1.9	3.49
48	--	--	1	1.9	17	31.5	35	64.8	1	1.9	3.64
49	2	3.7	5	9.3	22	40.7	24	44.4	1	1.9	3.29
50	3	5.6	5	9.3	17	31.5	28	51.9	1	1.9	3.32

TABLE XXVIII

The Ranking of Importance of Flower Shop Management Abilities
as Rated by All Students

Abilities	Mean Value of Student Rating
29. Ability to successfully meet and deal with the public.	3.69
31. Ability to plan and think ahead.	3.66
48. Ability to "get along" with other employees	3.64
42. Ability to communicate well verbally.	3.62
30. Understanding the importance of public relations.	3.53
32. Ability to be innovative (idea person).	3.49
47. Ability to maintain a positive relationship between employer and employee.	3.49
41. Ability to use the phone in a business-like manner.	3.48
40. Ability to sell over the phone.	3.34
50. Ability to motivate and stimulate employees.	3.32
45. Ability to write legibly.	3.30
49. Ability to maintain worker interest and enthusiasm.	3.29
43. Ability to spell reasonably well.	3.25
34. Understanding the importance of time and motion economy.	3.19
23. Ability to purchase perishable merchandise.	3.17
46. Ability to organize employees work duties and follow through.	3.15
35. Understanding inventory control and turnover.	3.14
39. Understanding creative merchandising.	3.11
26. Ability to price non-perishable merchandise.	3.09
25. Ability to price perishable merchandise.	3.09
24. Ability to purchase non-perishable merchandise.	3.04
38. Understanding the wire services.	3.03
36. Understanding and practicing stock rotation.	3.02
28. Ability to plan and execute in-store and window displays.	2.96
44. Ability to communicate in writing.	2.94
37. Understanding the workings of credit.	2.92
33. Understanding the use of financial records.	2.85
27. Ability to plan advertising and promotions.	2.60

TABLE XXIX

Importance of Abilities as Related to Flower Shop Management
as Rated by Employers

Abilities	Not Required		Slightly Important		Considerably Important		Critically Important		Response Omitted		Mean Value
	N	%	N	%	N	%	N	%	N	%	
23	4	12.5	2	6.3	8	25.0	12	37.5	6	18.8	3.08
24	5	15.6	1	3.1	10	31.3	10	31.3	6	18.8	2.96
25	3	9.4	4	12.5	4	12.5	15	46.9	6	18.8	3.19
26	4	12.5	4	12.5	6	18.8	12	37.5	6	18.8	2.77
27	7	21.9	5	15.6	9	28.1	5	15.6	6	18.8	2.46
28	4	12.5	2	6.3	9	28.1	11	34.4	6	18.8	3.04
29	-	--	-	--	6	18.8	20	62.5	6	18.8	3.77
30	1	3.1	1	3.1	11	34.4	13	40.6	6	18.8	3.38
31	-	--	1	3.1	8	25.0	17	53.1	6	18.8	3.62
32	1	3.1	1	3.1	14	43.8	10	31.3	6	18.8	3.27
33	6	18.8	4	12.5	7	21.9	9	28.1	6	18.8	2.73
34	-	--	-	--	13	40.6	12	37.5	7	21.9	3.48
35	2	6.3	3	9.4	11	34.4	9	28.1	7	21.9	3.08
36	-	--	2	6.3	13	40.6	11	34.4	6	18.8	3.35
37	2	6.3	1	3.1	11	34.4	11	34.4	7	21.9	3.24
38	1	3.1	2	6.3	13	40.6	10	31.3	6	18.8	3.36
39	2	6.3	3	9.4	13	40.6	8	25.0	6	18.8	3.04
40	1	3.1	2	6.3	7	21.9	16	50.0	6	18.8	3.46
41	-	--	1	3.1	8	55.0	18	56.3	5	15.6	3.63
42	-	--	-	--	11	34.4	16	50.0	5	15.6	3.59
43	-	--	2	6.3	16	5.0	9	28.1	5	15.6	3.26
44	2	6.3	4	12.5	13	40.6	8	25.0	5	15.6	3.00
45	-	--	4	12.5	13	40.6	8	25.0	5	15.6	3.00
46	2	6.3	1	3.1	12	37.5	12	37.5	5	15.6	3.26
47	-	--	1	3.1	14	43.8	12	37.5	5	15.6	3.41
48	-	--	2	6.3	12	37.5	13	40.6	5	15.6	3.41
49	-	--	-	--	14	43.8	13	40.6	5	15.6	3.48
50	-	--	3	9.4	13	40.6	10	31.3	6	18.8	3.27

42. Ability to communicate well verbally.

40. Ability to sell over the phone.

Three of the five skills are common to the three above listings and #29, Ability to successfully meet and deal with the public, is considered the most important skill by all groups. It is noteworthy that the majority of skills considered critical are skills dealing with inter-personal relations rather than skills unique to the floral industry.

The data in Table XXX compares the rankings of persistent graduates with those of dropouts and employers concerning the relative importance of the listed skills. The mean value of the "grads" was used as the base and the skills were ranked from high to low. A ranking of 3.49, for example, indicates that the students rate the particular skill about midway between "Considerably Important" (3.00) and "Critically Important" (4.00).

There are some major differences between the mean values of the graduates and those of the employers. The most difference is found in #38; Understand the wire service. Employers rank it 3.36; employees 2.95, a .41 difference. Employers also feel that; Understanding and practicing stock rotation, Understanding the workings of credit, Ability to price non-perishable merchandise, and Understanding the importance of time and motion economy, were all more important than employees felt they were.

Conversely, the Ability to 'get along' with other employees and the Ability to be innovative were much more important to the former students than they were to the employers.

TABLE XXX

The Ranking of Importance of Flower Shop Management Related Abilities
as Rated by Persistent Former Students and Employers

Abilities	Mean Values (Highest → Lowest)		
	Students		Employers
	Graduates	Dropouts	
29	3.67	3.80	3.77
31	3.67	3.60	3.62
48	3.63	3.70	3.41
42	3.60	3.70	3.59
30	3.49	3.70	3.38
32	3.49	3.50	3.27
47	3.49	3.50	3.41
41	3.47	3.50	3.63
49	3.33	3.10	3.48
40	3.30	3.50	3.46
45	3.30	3.30	3.33
50	3.30	3.40	3.27
43	3.28	3.10	3.26
34	3.23	3.00	3.48
23	3.19	3.10	3.08
39	3.14	3.00	3.04
46	3.14	3.30	3.26
35	3.12	3.20	3.08
26	3.09	3.10	2.77
24	3.07	2.90	2.96
25	3.02	3.30	3.19
28	3.00	2.80	3.04
36	2.95	3.30	3.35
38	2.95	3.40	3.36
44	2.93	3.00	3.00
37	2.88	3.10	3.24
33	2.84	2.90	2.73
27	2.58	2.70	2.46

Tables XXXI and XXXII are very closely related but the information in the latter is slightly broader.

Table XXXII is a comparison of the abilities which both the persistent former students and the employers rated as either 'Not Required' or 'Slightly Important.' The fifteen abilities which are typed on the table were the ones which 25% or more of the students and 20% or more of the employers felt were not very important. The six skills with asterisks were those which both groups felt were relatively unimportant.

To determine which skills were rated 'Considerably Important' by former students and employers, consult Table XXXIII. To determine which skills were rated 'Considerably' or 'Critically Important,' scan Table XXXIV. There is an overlap of information; however, Table XXXIII is in finer detail.

Every ability that is ranked by 85% or more of the persisters and 80% or more of the employers is identified with an asterisk. A higher percentage is arbitrarily assigned to the persisters due to their larger population. Therefore the eleven starred skills are the ones the employers and persisters both felt were the most important. They are listed below:

6. Ability to design at a good speed.
9. Ability to interpret the customer's wishes design-wise.
11. Ability to recognize and use good color combinations.
13. Ability to price permanent and dried arrangements profitably.
14. Ability to practice and appreciate the business aspects of design, that is, design profitably.
21. Ability to recognize and use most available supplies and materials.

TABLE XXXI

Comparison of Abilities Rated "Not Required" by
Persistent Former Students and by Employers

Abilities	Percent		Abilities	Percent	
	Student Persisters	Employers		Student Persisters	Employers
1	5.6	9.4	23	11.1	12.5
2	3.7	6.3	24	13.0	15.6
3	5.6	9.4	25	13.0	9.4
4	3.7	6.3	26	11.1	12.5
5	5.6	6.3	27	22.2	21.9
6	3.7	6.3	28	9.3	12.5
7	3.7	9.4	29	1.9	--
8	5.6	9.4	30	1.9	3.1
9	3.7	3.1	31	1.9	--
10	5.6	6.3	32	--	3.1
11	--	3.1	33	16.7	18.8
12	7.4	6.3	34	5.6	--
13	5.6	9.4	35	11.1	6.3
14	5.6	3.1	36	13.0	--
15	11.1	12.5	37	9.3	6.3
16	1.9	12.5	38	7.4	3.1
17	5.6	12.5	39	7.4	6.3
18	7.4	15.6	40	5.6	3.1
19	5.6	12.5	41	1.9	--
20	5.6	12.5	42	--	--
21	3.7	3.1	43	--	--
			44	5.6	6.3
			45	--	--
			46	9.3	6.3
			47	1.9	--
			48	--	--
			49	3.7	--
			50	5.6	--

TABLE XXXII

Comparison of Abilities Rated "Not Required" or "Slightly Important"
by Persistent Former Students and Employers

Abilities	Student Persisters	Employers	Ability
1*	29.7	21.9	Ability to design corsages.
2	11.1	12.6	
3	14.9	18.8	
4	20.4	21.9	Ability to design wedding work.
5	26.0	15.7	Ability to design novelty arrangements.
6	11.1	6.3	
7	14.8	15.7	
8	24.1	25.0	Ability to design with permanent and dried materials.
9	9.3	6.2	
10	14.9	9.4	
11	5.6	3.1	
12	7.4	6.3	
13	9.3	12.5	
14	13.0	6.2	
15*	37.1	21.9	Ability to plan and estimate the labor and material costs of large parties.
16*	33.4	28.1	Ability to advise customers on horticultural problems.
17	22.3	18.8	
18	18.5	15.6	
19	9.3	18.8	
20	24.1	15.6	
21	14.8	3.1	

23	24.1	18.8	
24	20.4	18.7	
25*	27.8	21.9	Ability to price perishable merchandise.
26	22.2	25.0	Ability to price non-perishable merchandise.
27*	42.6	37.5	Ability to plan advertising and promotion.
28	27.8	18.8	Ability to plan and execute in-store and window displays.
29	3.8	--	
30	7.5	6.2	
31	1.9	3.1	
32	1.9	6.2	
33*	35.2	31.3	Understanding the use of financial records.
34	18.6	--	
35	24.0	15.7	
36	26.0	6.3	Understanding and practicing stock rotation.
37	35.3	9.4	Understanding the workings of credit.
38	25.9	9.4	Understanding the wire services.
39	20.4	15.7	
40	13.0	9.4	
41	13.0	3.1	
42	3.7	--	
43	14.8	6.3	
44	27.8	18.8	Ability to communicate in writing.
45	13.0	9.4	
46	22.1	9.4	
47	7.5	3.1	
48	1.9	6.3	
49	13.0	--	
50	14.9	9.4	

* Student percentages 25% or over and employer percentages 20% or over.

TABLE XXXIII

Comparison of Abilities Rated "Considerably Important" by
Persistent Former Students and by Employers

Abilities	Percent		Abilities	Percent	
	Student Persisters	Employers		Student Persisters	Employers
1	37.0	40.6	23	22.2	25.0
2	35.2	28.1	24	40.7	31.3
3	26.0	15.6	25	22.2	12.5
4	33.3	40.6	26	33.3	18.8
5	40.7	34.4	27	30.0	28.1
6	27.8	37.5	28	37.0	28.1
7	33.3	46.9	29	20.4	18.8
8	46.3	43.8	30	29.6	34.4
9	29.6	31.3	31	27.8	25.0
10	26.0	37.5	32	38.9	43.8
11	42.6	34.4	33	26.0	21.9
12	26.0	18.8	34	31.0	40.6
13	29.6	28.1	35	33.3	34.4
14	29.6	18.8	36	31.5	40.6
15	29.6	28.1	37	26.0	34.4
16	44.4	40.6	38	35.2	40.6
17	42.6	43.8	39	38.9	40.6
18	35.2	34.4	40	33.3	21.9
19	50.0	34.4	41	24.1	25.0
20	51.9	46.9	42	29.6	34.4
21	46.3	43.8	43	44.4	50.0
			44	42.6	40.6
			45	42.6	37.5
			46	24.1	37.5
			47	33.3	43.8
			48	31.5	37.5
			49	40.7	43.8
			50	31.5	40.6

TABLE XXXIV

Comparison of Abilities Rated "Considerably Important" or
"Critically Important" by Persistent Former Students
and Employers

Abilities	Percent		Abilities	Percent	
	Student Persisters	Employers		Student Persisters	Employers
1	68.2	68.7	23	74.1	62.5
2	87.1	78.1	24	77.7	62.6
3	83.4	71.9	25	70.3	59.4
4	77.7	68.7	26	75.9	56.3
5	72.2	75.0	27	56.0	43.7
6*	87.1	84.4	28	70.3	62.5
7	83.3	75.0	29*	94.5	81.3
8	74.1	65.7	30	90.7	75.0
9*	88.9	84.4	31	96.3	78.1
10	83.4	84.4	32*	94.5	85.1
11*	92.6	87.5	33	63.0	50.0
12	79.7	87.6	34	79.6	78.1
13*	88.9	81.2	35	77.7	62.5
14*	85.2	87.6	36	72.2	75.0
15	61.1	71.9	37	73.0	68.8
16	64.8	62.5	38	72.2	71.9
17	65.9	71.9	39	77.8	65.6
18	79.6	75.0	40	85.2	71.9
19	88.9	71.9	41	66.7	81.3
20	74.1	75.0	42*	94.4	84.4
21*	83.3	87.6	43	83.3	78.1
			44	70.4	65.6
			45	85.2	75.0
			46	74.1	75.0
			47*	90.7	81.3
			48	96.3	78.1
			49*	85.1	84.4
			50	83.4	71.9

*Student ratings of 85% or more with employer ratings of 80% or more.

- 29. Ability to successfully meet and deal with the public.
- 32. Ability to be innovative (idea person).
- 42. Ability to communicate well verbally
- 47. Ability to maintain a positive relationship between employer and employee.
- 49. Ability to maintain worker interest and enthusiasm.

In this comparison there is disagreement also. There are five skills in the arbitrary student 85% category which are not similarly listed by the employers; there are three skills listed by the employers that are not 85% ranked by the student group.

Table XXXV was designed to locate the required skills for which the persistent former students felt they received no training. In the previous sentence and in the table, 'required' means the skills the students view as either 'Considerably or Critically Important.' Twenty-three of the 49 listed skills, 46%, are so classified by 80% or more of the students. Eighty-four percent of the skills are listed as being either 'Considerably or Critically Important' by 70% or more of the students. This means that the students are at least exposed to the subjects they rate as being the most important.

The list below is a ranking of the responses of former students who felt they received no training in the 'Considerably or Critically Important' skills listed below:

- 42. 20.4% Ability to communicate well verbally.
- 45. 20.4% Ability to write legibly.
- 49. 16.7% Ability to maintain worker interest and enthusiasm.
- 50. 16.7% Ability to motivate and stimulate employees.

TABLE XXXV

Abilities Reported by Persistent Former Students as Being
 "Considerably" or "Critically Important" for Which
 They Received No Training

Abilities	Perceived Ability as Required		Received No Training		Abilities	Perceived Ability as Required		Received No Training	
	#	%	#	%		#	%	#	%
1	37	68.2	--	--	23	40	74.1	5	9.3
2	47	87.1	--	--	24	42	77.7	9	16.7
3	45	83.4	--	--	25	38	70.3	3	5.6
4	42	77.7	--	--	26	41	75.9	3	5.6
5	39	72.2	2	3.7	27	30	56.0	3	5.6
6	47	87.1	4	7.4	28	38	70.3	1	1.9
7	45	83.3	5	9.3	29	51	94.5	6	11.1
8	40	74.1	3	5.6	30	49	90.7	5	9.3
9	48	88.9	6	11.1	31	52	96.3	6	11.1
10	45	83.4	3	5.6	32	51	94.5	8	14.8
11	50	92.6	6	11.1	33	34	63.0	3	5.6
12	43	79.7	2	3.7	34	43	79.6	4	7.4
13	48	88.9	2	3.7	35	42	77.7	2	3.7
14	46	85.2	6	11.1	36	39	72.2	4	7.4
15	33	61.1	5	9.3	37	34	73.0	2	3.7
16	35	64.8	2	3.7	38	39	72.2	1	1.9
17	41	75.9	1	1.9	39	42	77.8	4	7.4
18	43	79.6	1	1.9	40	46	85.2	4	7.4
19	48	88.9	1	1.9	41	36	66.7	5	9.3
20	40	74.1	--	--	42	51	94.4	11	20.4
21	45	83.3	4	7.4	43	45	83.3	4	7.4
					44	38	70.4	4	7.4
					45	46	85.2	11	20.4
					46	40	74.1	6	11.1
					47	49	90.7	3	5.6
					48	52	96.3	7	13.0
					49	46	85.1	9	16.7
					50	45	83.4	9	16.7

- 24. 16.7% Ability to purchase non-perishable merchandise.
- 32. 14.8% Ability to be innovative (idea person).

The non-horticulture courses in the Commercial Floriculture Technical Program, which teach skills #42 and #45, were very heavily criticized in the program improvement section of the questionnaire.

According to the data on Table XXXVI there are only six skills which are rated by 55% or more of the persistent former students and by 50% of the employers as being of critical importance by both students and employers. The skills are listed below:

- 3 Ability to design funeral arrangements
- 13. Ability to price permanent and dried arrangements.
- 14. Ability to practice and appreciate the business aspects of design, that is, design profitably
- 29. Ability to successfully meet and deal with the public.
- 31. Ability to plan and think ahead.
- 42. Ability to communicate well verbally

Table XXXVII is a compilation of data taken from the employers' questionnaire. The mean of all the employer ratings of all the skills is 3.19 or the students do slightly better than satisfactory in the performance of their jobs. Generally the employers are very pleased with their former student help, some of which have been working at the same shop for as much as six years. Only an average of 3.3% of the employers rated their students as needing improvement but an average of 10.3% of the employers rated their students as having 'Outstanding Ability.'

TABLE XXXVI

Comparison of Abilities Rated "Critically Important" by
Persistent Former Students and by Employers

Abilities	Percent		Abilities	Percent	
	Student Persisters	Employers		Student Persisters	Employers
1	31.2	28.1	23	51.9	37.5
2	51.9	50.0	24	37.0	31.3
3*	57.4	56.3	25	48.1	46.9
4	44.4	28.1	26	42.6	37.5
5	31.5	40.6	27	26.0	15.6
6	59.3	46.9	28	33.3	34.4
7	50.0	28.1	29*	74.1	62.5
8	27.8	21.9	30	61.1	40.6
9	59.3	53.1	31*	68.5	53.1
10	57.4	46.9	32	58.6	31.3
11	50.0	53.1	33	37.0	28.1
12	53.7	68.8	34	42.6	37.5
13*	59.3	53.1	35	44.4	28.1
14*	55.6	68.8	36	40.7	34.4
15	31.5	43.8	37	37.0	34.4
16	20.4	21.9	38	37.0	31.3
17	33.3	28.1	39	38.9	25.0
18	44.4	40.6	40	51.9	50.0
19	38.9	37.5	41	42.6	56.3
20	22.2	28.1	42*	64.8	50.0
21	37.0	43.8	43	38.9	28.1
			44	27.8	25.0
			45	48.1	37.5
			46	50.0	37.5
			47	57.4	37.5
			48	64.8	40.6
			49	44.4	40.6
			50	51.9	31.3

* Student ratings of 55% or more plus employer ratings of 50% or more.

TABLE XXXVII

Ability to Perform Selected Competencies as Evaluated by Employers

Abilities	Perceived as Required	Little or No Ability (1)		Needs Improvement (2)		Satisfactory (3)		Outstanding Ability (4)		Mean Ratings of Ability
		N	%	N	%	N	%	N	%	
1	22	1	3.1	1	3.1	12	37.5	13	40.6	3.37
2	25	1	3.1	1	3.1	8	25.0	17	53.1	3.52
3	23	1	3.1	2	6.3	12	37.5	12	37.5	3.30
4	22	1	3.1	2	6.3	13	40.6	11	34.4	3.26
5	24	1	3.1	1	3.1	10	31.3	15	46.9	3.44
6	27	1	3.1	9	28.1	8	25.0	9	28.1	2.93
7	24	2	6.3	2	6.3	10	31.3	13	40.6	3.26
8	21	2	6.3	3	9.4	8	25.0	14	43.8	3.26
9	27	1	3.1	2	6.3	10	31.3	14	43.8	3.37
10	27	1	3.1	3	9.4	13	40.6	10	31.3	3.19
11	28	1	3.1	2	6.3	10	31.3	14	43.8	3.37
12	28	1	3.1	2	6.3	10	31.3	14	43.8	3.37
13	26	1	3.1	2	6.3	9	28.1	14	43.8	3.38
14	28	1	3.1	2	6.3	11	34.4	13	40.6	3.33
15	23	2	6.3	3	9.4	10	31.3	11	34.4	3.15
16	20	2	6.3	3	9.4	9	28.1	10	31.3	3.13
17	23	2	6.3	3	9.4	10	31.3	10	31.3	3.12
18	24	2	6.3	2	6.3	9	28.1	12	37.5	3.24
19	23	1	3.1	1	3.1	11	34.4	12	37.5	3.36
20	24	2	6.3	-	-	12	37.5	11	34.4	3.28
21	28	1	3.1	2	6.3	11	34.4	11	34.4	3.28

TABLE XXXVII
(Continued)

Abilities	Perceived as Required	Little or No Ability (1)		Needs Improvement (2)		Satisfactory (3)		Outstanding Ability (4)		Mean Ratings of Ability
		N	%	N	%	N	%	N	%	
23	20	-	---	2	6.3	10	31.3	10	31.3	3.36
24	20	1	3.1	4	12.5	9	28.1	8	25.0	3.09
25	19	1	3.1	2	6.3	8	25.0	11	34.4	3.32
26	18	1	3.1	1	3.1	12	37.5	7	21.9	3.19
27	14	1	3.1	5	15.6	7	21.9	5	15.6	2.89
28	20	3	9.4	5	15.6	3	9.4	11	34.4	3.00
29	26	-	---	3	9.4	8	25.0	12	37.5	3.39
30	24	-	---	4	12.5	6	18.8	12	37.5	3.36
31	25	-	---	2	6.3	12	37.5	9	28.1	3.30
32	24	1	3.1	2	6.3	12	37.5	8	25.0	3.17
33	16	1	3.1	6	18.8	7	21.9	5	15.6	2.84
34	25	1	3.1	9	28.1	8	25.0	4	12.5	2.68
35	20	2	6.3	6	18.8	10	31.3	4	12.5	2.73
36	24	-	---	8	25.0	11	34.4	4	12.5	2.83
37	22	-	---	5	15.6	11	34.4	6	18.8	3.05
38	23	-	---	1	3.1	12	37.5	9	28.1	3.36
39	21	1	3.1	2	6.3	11	34.4	8	25.0	3.18
40	23	-	---	3	9.4	10	31.3	11	34.4	3.38
41	26	-	---	1	3.1	11	34.4	12	37.5	3.46
42	27	-	---	2	6.3	16	50.0	6	18.8	3.17
43	25	-	---	7	21.9	11	34.4	6	18.8	2.96
44	21	-	---	7	21.9	9	28.1	7	21.9	3.00
45	24	-	---	11	34.4	6	18.8	7	21.9	2.83
46	24	-	---	4	12.5	11	34.4	8	25.0	3.17
47	26	-	---	2	6.3	12	37.5	10	31.3	3.33
48	25	-	---	2	6.3	7	21.9	15	46.9	3.54
49	27	-	---	4	12.5	10	31.3	10	31.3	3.25
50	23	1	3.1	4	12.5	12	37.5	6	18.8	3.00

The second or right hand response column of the persistent former student's questionnaire asks the question 'Where did you learn the most about this skill?' The respondent had the choice of one of the following responses to each listed skill:

1. No training,
2. Outside M.S.U.,
3. Ag. Tech. Courses,
4. Placement Training.

The replies from this question were as varied and diverse as expected since some students have had five years more work experience than others and some have been out in the industry eight years and others have been working only three years. Below is the list of the number of years the persisters have been working in the industry.

1965	1 former student	8 years
1966	11 former students	7 years
1967	11 former students	6 years
1968	11 former students	5 years
1969	8 former students	4 years
1970	12 former students	3 years

In the elapsed time since leaving the program, as several students mentioned, it would be difficult to recall exactly when and where and if certain skills were learned in or out of the program or on placement training or through the work experience. One must also realize that the purpose of the Commercial Floriculture Technical Program is not to teach mastery of all the needed skills but rather in the brief 18 month

period to introduce the students to a wide range of subject matter and teach the basic skills so as to provide a foundation upon which he can more easily and quickly build his vocational life. Unfortunately, many students and employers feel that graduates of the program should be skilled, fully trained floral experts, capable of performing any job in the flower shop. As an example, retail oriented students graduate from the program with 120 class hours (80 actual hours) of floral design experience. Part of the class time is devoted to lectures and demonstrations. This means that design students have less than two weeks of experience when they leave the program. One must understand all these factors before attempting to analyze the data in the tables.

Of the twenty-one skills listed in Table XXXVIII, 9 skills were learned mainly in the classroom situation, 7 outside M.S.U., 4 in placement training and one tied between placement training and outside M.S.U. Looking at it differently, 42.8% of the skills were learned in the classrooms, 19% through placement training and 33% outside M.S.U. Outside M.S.U. means training or experience received before coming to or after leaving M.S.U., but it doesn't include placement training. To the casual observer the 33% outside M.S.U. may seem to be much too high a percentage until one realizes that one is actually comparing (using the total group of 88 persisters) 274 years of practical industry experience to 88 years of training--a ratio of 3:1.

The skills that the majority of the students checked as learning in the classroom situation are listed in descending order:

17. Ability to recognize and use commercially grown flowers, plants and foliages.

TABLE XXXVIII

Where Persistent Former Students Learned the Most About Skills
in the Floral Design Area

Abilities	Perceived Ability as Required	No Training		Learned Outside M.S.U.		Ag. Tech. Classroom Instruc- tion		Learned in Placement Training	
	N	N	%	N	%	N	%	N	%
1	37	-	--	20	37.0	13	24.1	30	37.0
2	47	-	--	14	25.9	16	29.6	23	42.6
3	45	-	--	17	31.5	13	24.1	23	42.6
4	42	-	--	16	29.6	16	29.6	21	38.9
5	39	2	3.7	22	40.7	12	22.2	15	27.8
6	47	4	7.4	21	38.9	4	7.4	24	44.4
7	45	5	9.3	21	38.9	12	22.2	14	25.9
8	40	3	5.6	23	42.6	10	18.5	17	31.5
9	48	6	11.1	22	40.7	5	9.3	19	35.2
10	45	3	5.6	24	44.4	10	18.5	16	29.6
11	50	6	11.1	14	25.9	24	44.4	9	16.7
12	43	2	3.7	7	13.0	38	51.9	16	29.6
13	48	2	3.7	18	33.3	16	29.6	17	31.5
14	46	6	11.1	11	24.0	19	35.2	16	29.6
15	33	5	9.3	18	33.3	12	22.2	17	31.5
16	35	2	3.7	10	18.5	36	66.6	5	9.3
17	41	1	1.9	8	14.8	37	68.5	7	13.0
18	43	1	1.9	8	14.8	36	66.6	8	14.8
19	48	1	1.9	10	18.5	30	55.6	12	22.2
20	40	-	--	12	22.2	34	33.0	7	13.0
21	45	4	7.4	16	29.6	18	33.3	15	27.8

- 16. Ability to advise customers on horticulture problems.
- 18. Ability to handle and care for cut flowers and foliages.
- 19. Ability to handle and care for blooming and foliage plants.
- 12. Ability to price fresh arrangements profitably.
- 11. Ability to recognize and use good color combinations.
- 14. Ability to practice and appreciate the business aspects of design, that is, design profitably.
- 20. Ability to recognize and use foams, fillers and preservatives.
- 21. Ability to recognize and use most available supplies and materials.

The above skills are basic foundation skills and some of the objectives of the floral design classes.

The skills the majority of the students report as having learned the most about through placement training are as follows:

- 2. Ability to design home and hospital arrangements.
- 3. Ability to design funeral arrangements.
- 1. Ability to design corsages.
- 4. Ability to design wedding work.

The skills listed are all strictly floral design skills. The former students spent between approximately either 960 hours or 1,920 hours on placement training depending on whether they had 6 months or one year of it. They spent 80 hours in the floral design laboratory. Consequently it is logical that they should learn more, design-wise, in placement training than through their formal classes.

The skills the majority of the persistent former students report as learning most about 'Outside M.S.U.' are listed below and are ranked in descending order:

10. Ability to recognize the importance of selling what you're "heavy on."
8. Ability to design with permanent and dried materials.
9. Ability to interpret the customer's wishes design-wise.
5. Ability to design novelty arrangements.
7. Ability to design with "a flair" (design creativity).
15. Ability to plan and estimate the labor and material costs of large parties.
13. Ability to price permanent and dried arrangements profitably.

Skills 10, 9 and 15 are developed only with practice. Number 10 can be recognized as being important in class but the shop "boss" will impress upon his employees the necessity of selling what he's "heavy" on. The ability to interpret the customer's wishes design-wise, can only be developed with years of experience. Designing creatively also cannot be taught as such. Some designers will never be 'creative' or 'artistic' and be able to design with a flair. A natural talent can be developed if it exists through practical experience and/or individual training. The system used to price floral arrangements and/or large parties is unique to each shop and is handled according to the system devised by management. These skills too are learned through practical experience.

Of the 28 flower shop management related skills, the majority of the students said 14 skills were learned 'Outside M.S.U.'; 10 were learned in the program courses, and 4 were learned on placement training. The skills learned 'Outside M.S.U.' are ranked below from highest to lowest percent of responding students.

TABLE XXXIX

Where Persistent Former Students Learned the Most About Abilities
in the Flower Shop Management Area

Abilities	Perceived Ability as Required	No Training		Learned Outside M.S.U.		Ag. Tech. Classroom Instruc- tion		Learned in Placement Training	
	N	N	%	N	%	N	%	N	%
23	40	5	9.3	22	40.7	7	13.0	18	33.3
24	42	9	16.7	22	40.7	8	14.8	14	25.9
25	38	3	5.6	15	27.8	16	29.6	18	33.3
26	41	3	5.6	20	37.0	17	31.5	13	24.1
27	30	3	5.6	11	20.4	32	59.3	5	9.3
28	38	1	1.9	8	14.8	33	61.1	10	18.5
29	51	6	11.1	18	33.3	6	11.1	22	40.7
30	49	5	9.3	18	33.3	18	33.3	10	18.5
31	52	6	11.1	21	38.9	11	20.4	14	25.9
32	51	8	14.8	21	38.9	13	24.1	8	14.8
33	34	3	5.6	13	24.1	33	61.1	3	5.6
34	43	4	7.4	16	29.6	23	42.6	9	16.7
35	42	2	3.7	15	27.8	26	48.1	9	16.7
36	39	4	7.4	16	29.6	23	42.6	8	14.8
37	34	2	3.7	17	31.5	26	48.1	7	13.0
38	39	1	1.9	15	27.8	22	40.7	13	24.1
39	42	4	7.4	15	27.8	21	38.9	10	18.5
40	46	4	7.4	15	27.8	11	20.4	21	38.9
41	36	5	9.3	16	29.6	14	25.9	17	31.5
42	51	11	20.4	22	40.7	10	18.5	9	16.7
43	45	4	7.4	33	61.1	10	18.5	4	7.4
44	38	4	7.4	30	55.6	14	25.9	3	5.6
45	46	11	20.4	30	55.6	8	14.8	2	3.7
46	40	6	11.1	23	42.6	6	11.1	15	27.8
47	49	3	5.6	26	28.1	3	5.6	18	33.3
48	52	7	13.0	23	42.6	4	7.4	16	29.6
49	46	9	16.7	24	44.4	5	9.3	13	24.1
50	45	9	16.7	23	42.6	8	14.8	11	20.4

- 43. Ability to spell reasonably well.
- 44. Ability to communicate in writing.
- 45. Ability to write legibly.
- 47. Ability to maintain a positive relationship between employer and employee.
- 49. Ability to maintain worker interest and enthusiasm.
- 50. Ability to motivate and stimulate employees.
- 48. Ability to "get along" with other employees.
- 46. Ability to organize employees' work duties and follow through.
- 42. Ability to communicate well verbally.
- 23. Ability to purchase perishable merchandise.
- 24. Ability to purchase non-perishable merchandise.
- 31. Ability to plan and think ahead.

An average of 45.5% of the persistent former students considered the above skills as being required for their job.

The skills listed below are those which the majority of students felt they learned the most about in Agricultural Technology Courses:

- 28. Ability to plan and execute in-store and window displays.
- 33. Understanding the use of financial records.
- 27. Ability to plan advertising and promotions.
- 35. Understanding inventory control and turnover.
- 37. Understanding the workings of credit.
- 36. Understanding and practicing stock rotation.
- 34. Understanding the importance of time and motion economy.
- 38. Understanding the wire services.
- 39. Understanding creative merchandising.
- 30. Understanding the importance of public relations.

An average of 39% of the students perceived the above skills as being required for their job.

The skills listed below are those which a majority of the persistent former students recalled learning the most about on placement training. They are ranked as the previous list is:

- 29. Ability to successfully meet and deal with the public.
- 40. Ability to sell over the phone.
- 25. Ability to price perishable merchandise.
- 41. Ability to use the phone in a business-like manner.

An average of 42.75% of the students perceived the above skills as required for their job. When comparing the above three lists, one discovers more students learn most about skills outside M.S.U. than at either of the other two given places but the percentage differences between them are too small to be significant.

According to the data in Table XL, of the 49 skills evaluated by the persistent former students as being 'Considerably Important' or 'Critically Important,' 20 said they learned the most about skills 'Outside M.S.U.' Seventeen said they learned the most about skills in Ag. Tech.; 10 said they learned the most about skills in Placement Training and 2 abilities were doubled marked, 2 and 3, and 2 and 4.

To the open-ended questions #22 and #51, "What other skills or competencies do you feel are necessary to the execution of your job?" there were nine responses. Four comments relate to floral design, two to retail flower shop management and three are personality traits. The responses were as follows:

TABLE XL

Where Persistent Former Students Learned Abilities Judged
"Considerably" or "Critically Important"

Abilities	Mean Ratings of Importance		Where Student Learned Most About Ability	Abilities	Mean Ratings of Importance		Where Student Learned Most About Ability
	Student	Employer			Student	Employer	
1	2.96	2.97	4	23	3.17	3.08	2
2	3.38	3.34	4	24	3.04	2.96	2
3	3.88	3.31	4	25	3.07	3.19	4
4	2.93	3.00	4	26	3.09	2.77	2
5	3.00	3.21	2	27	2.60	2.46	3
6	3.45	3.38	4	28	2.96	3.04	3
7	3.32	3.03	2	29	3.69	3.77	4
8	2.98	2.86	2	30	3.53	3.38	2-3
9	3.47	3.48	2	31	3.66	3.62	2
10	3.24	3.33	2	32	3.49	3.27	2
11	3.45	3.52	3	33	2.85	2.73	3
12	3.51	3.60	3	34	3.19	3.48	3
13	3.46	3.20	2	35	3.14	3.08	3
14	3.38	3.63	4	36	3.02	3.35	3
15	2.64	3.10	2	37	2.92	3.20	3
16	2.28	2.79	3	38	3.03	3.36	3
17	2.75	2.97	3	39	3.11	3.04	3
18	3.19	3.10	3	40	3.34	3.46	4
19	3.25	3.07	3	41	3.48	3.63	4
20	2.93	3.00	3	42	3.62	3.59	2
21	3.19	3.41	3	43	3.25	3.26	2
				44	2.94	3.00	2
				45	3.30	3.33	2
				46	3.17	3.26	2
				47	3.49	3.41	2
				48	3.64	3.41	2
				49	3.29	3.48	2-4
				50	3.32	3.27	2

Floral design.--

1. Ability to copy a design from only a picture.
2. Ability to create "modern" design.
3. Ability to design backwards, that is, with the front of the arrangement facing the customer.
4. Ability to recognize good design.

Flower shop management.--

1. Knowing more about the merchandise in the store.
2. Making sure supplies are ordered when needed.

Personality traits.--

1. Ability to get along with fellow workers.
2. Smiling personality.
3. To be able to sell the customer what you want him to have.

There were 93 responses to the open-ended question at the end of the "Skills" section of the persistent former student's questionnaire. The responses to the question, "What skills did you feel you lacked after you finished the program and began work in the floral industry?" were as follows:

TABLE XLI

Abilities Acquired by Persistent Former Students Through
Agricultural Technology Classroom Instruction or Placement Training

Abilities	Perceived Ability as Required	Ag. Tech. Classroom Instruc- tion		Learned in Placement Training		Classroom/ Placement Total	
	N	N	%	N	%	N	%
1	37	13	24.1	20	37.0	33	61.1
2	47	16	29.6	23	42.6	39	72.2
3	45	13	24.1	23	42.6	36	66.6
4	42	16	29.6	21	38.9	37	68.5
5	39	12	22.2	15	27.8	27	50.0
6	47	4	7.4	24	44.4	28	51.9
7	45	12	22.2	14	25.9	26	48.1
8	40	10	18.5	17	31.5	27	50.1
9	48	5	9.3	19	35.2	24	44.4
10	45	10	18.5	16	29.6	26	48.1
11	50	24	44.4	9	16.7	33	61.1
12	43	28	51.9	16	29.6	44	81.5
13	48	16	29.6	17	31.5	33	61.1
14	46	19	35.2	16	29.6	35	64.8
15	33	12	22.2	17	31.5	29	53.7
16	35	36	66.6	5	9.3	41	75.9
17	41	37	68.5	7	13.0	44	81.5
18	43	36	66.6	8	14.8	44	81.5
19	48	30	55.6	12	22.2	42	77.8
20	40	34	33.0	7	13.0	41	75.9
21	45	18	33.3	15	27.8	33	61.1

TABLE XLI
(Continued)

Abilities	Perceived Ability as Required	Ag. Tech. Classroom Instruc- tion		Learned in Placement Training		Classroom/ Placement Total	
	N	N	%	N	%	N	%
23	40	7	13.0	18	33.3	25	46.3
24	42	8	14.8	14	25.9	22	40.7
25	38	16	29.6	18	33.3	34	63.0
26	41	17	31.5	13	24.1	30	55.6
27	30	32	59.3	5	9.3	37	68.5
28	38	33	61.1	10	18.5	43	79.6
29	51	6	11.1	22	40.7	28	51.9
30	49	18	33.3	10	18.5	28	51.9
31	52	11	20.4	14	25.9	25	46.3
32	51	13	24.1	8	14.8	21	38.9
33	34	33	61.1	3	5.6	36	66.6
34	43	23	42.6	9	16.7	32	59.3
35	42	26	48.1	9	16.7	35	64.8
36	39	23	42.6	8	14.8	31	57.4
37	34	26	48.1	7	13.0	33	61.1
38	39	22	40.7	13	24.1	35	64.8
39	42	21	38.9	10	18.5	31	57.4
40	46	11	20.4	21	38.9	32	59.3
41	36	14	25.9	17	31.5	31	57.4
42	51	10	18.5	9	16.7	19	35.2
43	45	10	18.5	4	7.4	14	25.9
44	38	14	25.9	3	5.6	17	31.5
45	46	8	14.8	2	3.7	10	18.5
46	40	6	11.1	15	27.8	21	38.9
47	49	3	5.6	18	33.3	21	38.9
48	52	4	7.4	16	29.6	20	37.0
49	46	5	9.3	13	24.1	18	33.3
50	45	8	14.8	11	20.4	19	35.2

1. Design--need more practice, speed, weddings, experience	32
2. How to care for cut flowers	1
3. Cultural knowledge of house plants	6
4. Management, selling, business records, personnel, financial reports, laws, credit and advertising	28
5. Merchandising--buying fresh and non-perishable	10
6. Store and window display	2
7. Growing greenhouse crops	3
8. Practical application of skills	4
9. Miscellaneous	<u>7</u>
Total	93

Educational Activities

An important part of any person's education is his participation in the many educational activities both in and outside the classroom. This section of the questionnaire, which was sent to all former students, listed eight activities which students may become involved in. The students were to respond to each activity listed, by checking the appropriate square:

- ☐ I Didn't Participate,
- ☐ Of Little Benefit,
- ☐ Very Beneficial, or
- ☐ Extremely Beneficial.

The purposes of this section were to meet objectives 7 and 8 and hypothesis 4 as listed in the Introduction but repeated here for easy reference.

Objectives:

7. To determine which educational activities former students participated in.
8. To determine the educational contribution that former students placed on each of the eight listed school activities.

Hypothesis:

4. There will be a high correlation between former student persistence and participation in the listed educational activities.

Fall Mum Sales.--When comparing the responses of persisters to non-persisters, the majority of the persisters, 56.3%, responded negatively to the Fall Mum Sales. They indicated that the sales were of little value to their education. This sentiment was also expressed even stronger, 58.6%, by the non-persistent former students. Even though the majority of all students responded in a similar way, 92.4% of the persisters and 77.5% of the non-persisters indicated a very positive reaction to the Annual Spring Field Trip which is financed by the Fall Mum Sale. Perhaps this indicates a need to continue the Field Trip but with some other means of financial support. Or it could indicate the students realization that even though the selling of mums at the football games isn't "educational" it is necessary financially.

TABLE XLII
Eighty-eight Former Students Rating of Educational Activities

	I Didn't Participate		Of Little Benefit		Very Beneficial		Extremely Beneficial		N/R
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	N
Fall Mum Sales	10	11.4	39	44.3	31	35.2	6	6.8	2
Annual Spring Field Trip	7	8.0	4	4.5	33	37.5	40	45.5	4
Class Field Trips	10	11.4	6	6.8	36	44.3	35	39.8	1
Bridal Show	7	8.0	11	12.5	23	26.1	44	50.0	3
Floriculture Forum	14	15.9	28	31.8	30	34.1	13	14.8	3
Ag. Tech. Organization	50	56.8	15	17.0	15	17.0	3	3.4	5
Industry Groups Like M.S.F.A.*	28	31.8	14	15.9	23	26.1	20	22.7	3
Industry Conventions	6	6.8	11	12.5	29	33.0	39	44.3	3

*Michigan State Florists Association

TABLE XLIII

The Responses of Former Students by Category to the
Value of Eight Educational Activities

EDUCATIONAL ACTIVITY	I Didn't Participate N				Of Little Benefit N				Very Beneficial N				Extremely Beneficial N			
	*Non P	P	G	PG	Non P	P	G	PG	Non P	P	G	PG	Non P	P	G	PG
Fall Mum Sales	3	2	3	2	5	4	7	23	4	4	6	17	3	1		2
Annual Spring Field Trip	2	1	2	2	1		2	1	4	5	5	18	8	4	7	21
Class Field Trips	3	2	3	2	1		2	3	3	6	7	20	8	3	5	19
Bridal Show	2	1	2	2	2	1	3	5	3	5	3	12	7	4	8	25
Floriculture Forum	4	4	4	2	6	1	10	11	3	3	1	23	2	3	1	7
Ag. Tech Organizations	10	9	11	21	2		3	10	1	1	2	10	1	1		1
Industry Groups (Like M.S.F.A.)	9	3	8	8		1	2	11	3	4	4	12	3	3	2	12
Industry Conventions	4	1	1				2	9	4	4	7	14	7	5	6	21
TOTALS	37	23	34	39	17	7	31	73	25	32	67	126	39	24	29	108

*Non P = Non Persisters; P = Persisters; G = Graduates; PG = Persistent Graduates.

Annual Spring Field Trip.--Of all the educational activities listed, the Annual Spring Field Trip ranks highest, 92.4%, amongst persisters and ties for the highest ranking, 77.5%, with Industry Conventions amongst non-persistent former students. Eighty-three percent of all former students rated this educational activity either Very or Extremely Beneficial. There is no doubt as to the popularity or value of the Spring Field Trip, therefore, all efforts should be expended to continue this rewarding activity.

Class Field Trips.--Among persistent former students, the class field trips also rank unusually high, 87.3%, as compared to 71.9% amongst the non-persisters. Of the total groups of former students, 84.1% rank the class field trips Very or Extremely Beneficial. This strong positive response from all former students indicates the great educational value they place on field trips. Therefore, it would be well to consider methods of continuing and/or expanding the number of field trips even with the problems associated with high enrollments and larger classes

It could also be another indication that more learning is accomplished through this type of activity than through the more formal classroom situation.

Bridal Show --Almost 84% of the persisters and 70% of the non-persisters ranked the Bridal Show a Very or Extremely Beneficial educational activity. As another indication of its high educational value, 50% of all students ranked it Extremely Beneficial, the highest ranking in this category of any activity. These high rankings support

the "learn by doing" thesis of vocational education. Thirty percent of the non-persisters responded negatively to this activity. This could indicate a lack of interest in the bridal design area, a discouraging experience with their particular "show," a lack of personal involvement, or a feeling that the intense efforts involved aren't worth the costs. When compared to all the student rankings of all the other educational activities listed in Table XLVI, the Bridal Show ranked fourth, 76.1% very close to Industry Conventions, 77.1%.

Floriculture Forum --The Floriculture Forum is the organization students interested in the floral industry may belong to. Membership and participation is voluntary. Even though 42% of the former students either didn't belong to it or considered it of little benefit, 48% listed it either Very or Extremely Beneficial. Checking the data on Tables XLI and XLVI leads one to the conclusion that the Forum is not very popular.

Between persisters and non-persisters there is a great diversity of response concerning the "Forum." Almost 67% of the persisters, as compared with 22.6% of the non-persisters indicated the activity was Very or Extremely to their education. Part of the reason for the negative response among non-persisters was due to the fact that 33.3% of them were not involved in the Forum.

Looking at the responses from another angle, only 14.8% of all students thought the forum was extremely beneficial and one-third of all students found it very beneficial.

TABLE XLIV
Former Students Participation in Educational Activities

Educational Activity	All Former Students (88)		Persistors (54)	
	Number	Percent	Number	Percent
Fall Mum Sales	78	88.64	50	98.15
Annual Spring Field Trip	71	60.68	51	94.44
Class Field Trips	78	88.64	50	92.59
Bridal Show	71	80.68	51	94.44
Floriculture Forum	74	84.09	48	88.89
Ag. Tech Organizations	38	43.18	24	44.44
Industry Groups (Like M.S.F.A.)	60	68.18	43	79.63
Industry Conventions	82	93.18	53	98.15

TABLE XLV

Comparison of Persister and Non Persister Rankings of Educational Activities

Educational Activity	I Didn't Participate Of Little Benefit				Very Beneficial Extremely Beneficial			
	Persister*		Non Persister*		Persister		Non Persister	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Fall Mum Sales	31	56.3	18	58.6	24	43.7	13	41.4
Annual Spring Field Trip	4	7.6	7	22.5	48	92.4	24	77.5
Class Field Trips	7	12.7	9	28.1	48	87.3	23	71.9
Bridal Show	9	16.3	9	30.0	46	83.7	21	70.0
Floriculture Forum	18	33.3	24	77.4	36	66.7	7	22.6
Ag. Tech Organizations	40	75.5	25	85.7	13	24.5	4	14.3
Industry Groups (Like M.S.F.A.)	21	40.3	19	61.2	31	59.7	12	38.8
Industry Conventions	10	18.5	7	22.5	44	81.5	24	77.5

*Percent computed on only the responding persisters.

*Percent computed on only the responding non persisters.

TABLE XLVI

Ranking of Former Student Responses to Educational
Activities from Most to Least Important

Educational Activity	Very & Extremely Beneficial Responses (Percent)	Educational Activity	Extremely Beneficial Responses (Percent)
Class Field Trips	84.1	Bridal Show	50.0
Annual Spring Field Trip	83.0	Annual Spring Field Trip	45.5
Industry Conventions	77.3	Industry Conventions	44.3
Bridal Show	76.1	Class Field Trips	39.8
Floriculture Forum	48.9	Industry Groups	22.7
Industry Groups like M.S.F.A.	48.8	Floriculture Forum	14.8
Fall Mum Sales	42.0	Fall Mum Sales	6.8
Ag. Tech Organization	20.4	Ag. Tech Organization	3.4

The results of this study agree with the results of Elson's study (and others) in that those who persist in the industry are more active in industry related organizations while in school. One could also conclude with a fair degree of accuracy that these majority of students who are most active in the Forum will probably remain in the floral industry.

Ag. Tech. Organizations.--Seventy-three percent and 87.5% of the persisters and non-persisters, respectively, do not participate in the Agricultural Technology organizations. Therefore, it is understandable that only 24.5% of the persisters and 14.3% of the non-persisters rate this activity as being beneficial to their education. It is quite significant that almost the same percent of people who rate it as being beneficial also are involved in the organization. Like other activities one received benefits in proportion to one's involvement. One observes also that 14.4% more persisters than non-persisters are involved in the organization. These organizations were operational only one of the five years covered by this survey which accounts for the low ratings.

Industry Groups (Like M.S.F.A.)--There is little interest or participation in this activity by other than persistent students. Of the non-persisters, 89.4% do not participate; 47.8% of the persisters do. In spite of this, only 59.7% of the persisters do feel this activity is beneficial and 11.9% of those that do participate feel this activity is of little or no benefit. But on the rating, Extremely Beneficial, by all former students, this activity ranks fifth among

eight. It would appear then that those students involved with this organization believe in it strongly and benefit greatly from their association.

Industry Conventions.--The floral conventions are very popular and well attended by most all students as reflected in the rankings. Of the persistent students, 81.5% state that the conventions were either Very or Extremely Beneficial and 44.3% of all former students categorized the conventions as being Extremely Beneficial. Only one persister said he did not participate in the floral convention, compared with five non-persisters. Another indication of the value of conventions is that 77.3% of all former students ranked this activity either Very or Extremely Beneficial. Of eight activities the floral conventions ranked third. Comparing program graduates to dropouts gives the responses 54.1% vs. 32.2%, respectively, which indicates that this isn't as valid or significant a method of comparison as using persisters and non-persisters.

Student participation in the eight listed activities is optional except for the Bridal Show and Class Field Trips where they are part of the student's grade. Table XLIV clearly indicates the degree of participation in all eight activities by all students. Even though it is not required, 93.18% of the students participate in the industry floral conventions--or 98.15% of the persistent students. In all activities, there was little percentage difference in the participation level between all students and the persisters.

TABLE XLVII

Former Student Evaluation of Educational Activities
(Compilation of Positive and Negative Responses)

STUDENT RESPONSES				
Educational Activity	"I Didn't Participate" and "Of Little Benefit"		"Very Beneficial" and "Extremely Beneficial"	
	Number	Percent	Number	Percent
Fall Mum Sales	49	55.7	37	42.0
Annual Spring Field Trip	11	12.5	73	83.0
Class Field Trips	16	18.2	71	84.1
Bridal Show	18	20.5	67	76.1
Floriculture Forum	42	47.7	43	48.9
Ag. Tech Organizations	65	73.8	18	20.4
Industry Groups (Like M.S.F.A.)	42	47.7	43	48.8
Industry Conventions	17	19.3	68	77.3

Program Improvement

This was the "green" section of the questionnaire which was sent to all former students. This section dealt with Objectives #10, #11, and #12, and Hypothesis #3, all found in Chapter I but repeated below for ease of reference.

Objectives:

- 10 To determine former students opinions as to the importance of their many program related relationships in gaining a better understanding of the floral industry.
11. To determine former students opinion of the Commercial Floriculture Technical Program.
12. To determine the reasons former students left the program.

Hypothesis:

- 3 There will be a diversity of opinion as to former students' evaluation of the total Commercial Floriculture Technical Program at Michigan State University

The first page of the questionnaire was designed to bring forth information on how former students felt about many aspects of the program. It was possible to respond either with a (1) Disliked, (2) Feel Neutral, (3) Liked a Little, or (4) Liked Very Much, to each of the sixteen statements. The statements the students were to respond to are listed on Table XLIX.

The data in Table L is representative and denotes the popularity of various elements in the Commercial Floriculture Technician Program.

TABLE XLVIII

Former Students Feeling Concerning Various Elements of the Commercial Floriculture Technician Program

Question	Disliked 1		Feel Neutral 2		Liked A Little 3		Liked Very Much 4		No Response											
	Graduates		Dropouts		Graduates		Dropouts		Graduates		Dropouts		Graduates		Dropouts					
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%				
1.	0	0.00	0	0.00	8	13.33	8	30.77	15	25.00	8	30.77	37	61.66	10	38.46	2	0.00	0	0.00
2.	8	13.33	6	23.08	7	11.66	4	15.38	21	35.00	9	34.62	24	40.00	7	26.92	2	0.00	0	0.00
3.	4	6.66	4	15.38	4	6.66	6	23.08	16	26.66	5	19.23	36	60.00	11	42.31	2	0.00	0	0.00
4.	1	1.66	0	0.00	17	28.33	8	30.77	7	11.66	0	0.00	34	56.66	18	69.23	3	1.66	0	0.00
5.	6	10.00	5	19.23	13	21.66	4	15.38	19	31.66	8	30.77	21	35.00	9	34.62	3	1.66	0	0.00
6.	11	18.33	6	23.08	1	1.66	2	7.69	9	15.00	1	3.85	38	63.33	17	65.38	3	1.66	0	0.00
7.	8	13.33	4	15.38	5	8.33	4	15.38	19	31.66	6	23.08	28	46.66	12	46.15	2	0.00	0	0.00
8.	1	1.66	1	3.85	7	11.66	1	3.85	12	20.00	6	23.08	40	66.66	17	65.38	2	0.00	1	3.85
9.	0	0.00	0	0.00	1	1.66	0	0.00	5	8.33	2	7.69	53	88.33	24	92.31	3	1.66	0	0.00
10.	5	8.33	7	26.92	13	21.66	3	11.54	6	10.00	7	26.92	36	60.00	9	34.62	2	0.00	0	0.00
11.	8	13.33	11	42.31	24	40.00	5	19.23	13	21.66	5	19.23	13	21.66	5	19.23	4	3.33	0	0.00
12.	3	5.00	0	0.00	10	16.66	5	19.23	5	25.00	5	19.23	42	70.00	16	61.54	2	0.00	0	0.00
13.	2	3.33	0	0.00	24	40.00	14	53.85	10	16.66	1	3.85	24	40.00	11	42.31	2	0.00	0	0.00
14.	1	1.66	3	11.54	4	6.66	4	15.38	6	10.00	3	11.54	49	80.00	16	61.54	2	0.00	0	0.00
15.	8	13.33	4	15.38	18	30.00	9	34.62	8	13.33	1	3.85	21	35.00	7	26.92	7	8.33	5	19.23
16.	3	5.00	1	3.85	9	15.00	3	11.54	14	23.33	7	26.92	35	55.00	13	50.00	3	1.66	2	7.69

TABLE XLIX

Former Students Ranking of Sixteen Statements Concerning Various Elements
of the Commercial Floriculture Technician Program

Questions	Disliked		Feel Neutral		Liked A Little		Liked Very Much	
	Grad.	Drop.	Grad.	Drop.	Grad.	Drop.	Grad.	Drop.
1. The practicality of the Commercial Floriculture Program	0	0	13.33	30.77	25.00	30.77	61.66	38.46
2. The courses that were required	13.33	23.08	11.66	15.38	35.00	34.62	40.00	26.92
The wide range of subject matter covered in the courses	6.66	15.38	6.66	23.08	26.66	19.23	60.00	42.31
4. The optional four year courses available to those interested	1.66	0	28.33	30.77	11.66	0	56.66	69.23
5. The general quality of the instruction	10.00	19.23	21.66	15.38	31.66	30.77	35.00	34.62
6. Floral Design classes	18.33	23.08	1.66	7.69	15.00	3.85	63.33	65.38
7. The Greenhouse or Production classes	13.33	15.38	8.33	15.39	31.66	23.08	46.66	46.15
8. The idea of having practical class projects (not daily homework)	1.66	3.85	11.66	3.85	20.00	23.08	66.66	65.38
9. The idea of having some outside speakers in the classroom	0	0	1.66	0	8.33	7.69	88.33	92.31
10. Having classes daily with the same group of floriculture students	8.33	26.92	21.66	11.54	10.00	26.92	60.00	34.62
11. The administrative guidance in course selection.	13.33	42.31	40.00	19.23	21.66	19.23	21.66	19.23
12. The close relationship that exists between student and faculty	5.00	0	16.66	19.23	25.00	19.23	70.00	61.54
13. The availability of faculty to discuss personal problems	3.33	0	40.00	53.85	16.66	3.85	40.00	42.31
14. The idea of having placement training	1.66	11.54	6.66	15.38	10.00	11.54	80.00	61.54
15. The guidance and supervision in the placement training situation	13.33	15.38	30.00	34.62	13.33	3.85	35.00	26.92
16. The quality of the physical facilities and equipment used.	5.00	3.85	15.00	11.54	23.33	26.93	55.00	50.00

TABLE L

Former Students Ranking of the Popularity of Various Elements
in the Commercial Floriculture Technician Program

Statements	Most to Least Popular Rankings*	
9. The idea of having some outside speakers in the classroom.	1st	331
14. The idea of having placement training.	2nd	307
8. The idea of having practical class projects (not daily homework).	3rd	300
12. The close relationship that exists between student and faculty.	4th	295
1. The practicality of the Commercial Floriculture Program.	5th	289
4. The optional four year courses available to those interested.	6th	280
3. The wide range of subject matter covered in the courses.	7th	279
16. The quality of the physical facilities and equipment used.	8th	275
6. Floral Design classes.	9th	273
7. The Greenhouse and Production classes	10th	265
10. Having classes daily with the same group of floriculture students.	11th	263
13. The availability of faculty to discuss personal problems.	12th	251
2. The courses that were required.	13th	250
5. The general quality of the instruction.	14th	246
15. The guidance and supervision in the placement training situation.	15th	205
11. The administrative guidance in course selection.	16th	203

* The rankings are the totaled numerical response to each question by both graduates and dropouts.

The opinion of the program graduates was compiled and agreed basically with the results in this table. So it appears that the feelings of both program graduates and dropouts coincide.

The five most popular elements of the program in order are:

1. Outside speakers in the classroom,
2. Placement training,
3. Practical class projects (not daily homework)
4. The close relationship between student and faculty, and
5. The program practicality.

The five least popular items are:

1. Administrative guidance in course selection,
2. Placement training guidance and supervision,
3. The general quality of the instructions,
4. The required courses, and
5. The availability of faculty to discuss personal problems.

In light of these rankings it would appear that more emphasis needs to be placed in the areas of student guidance--both for courses and for placement. There also seems to be a problem with the courses, both the ones required and the quality of the instruction.

The most positive responses all relate to the practical--the "learn by doing" philosophy of vocational education. The value of placement training was again underscored.

The data in Tables LI and LII rank the responses of the former students on the importance of various program and floral industry relationships. When a subject area is ranked high it indicates the

TABLE LI

Former Students Ranking of Thirteen Statements Dealing with Their Understanding
Of and Relationship To the Floral Industry
(88 responses)

Question	1		2		3		4		No Response	
	N	%	N	%	N	%	N	%	N	%
1. Gaining a better understanding of yourself, your abilities and your goals.	4	4.55	14	15.91	24	27.27	42	47.73	4	4.55
2. Learning more about industry opportunities and requirements.	2	2.27	11	12.50	37	42.05	36	40.91	2	2.27
3. Receiving the kind of training which enables you to get a job in the field of your choice.	5	5.68	6	6.82	22	25.00	53	60.23	2	2.27
4. Receiving the encouragement, challenge, and sense of success necessary for you to continue your education after leaving the program.	9	10.23	11	12.50	30	34.09	35	39.77	3	3.41
5. Discovering new fields of interest due to classroom subject areas.	6	6.82	18	20.45	42	47.73	20	22.73	2	2.27
6. Becoming acquainted with industry people and developed a friendship or appreciation for them.	4	4.55	16	18.18	28	31.82	38	43.18	2	2.27
7. Developing an appreciation of the industry through its periodicals.	11	12.50	31	35.23	31	35.23	13	14.77	2	2.27
8. Developing a kinship, or feeling, for the industry which has led to greater understanding.	3	3.41	25	28.41	33	37.50	24	27.27	3	3.41
9. Your informal discussions with fellow students.	3	3.41	34	38.64	30	34.69	19	21.59	2	2.27
10. Your informal discussions with the instructors.	3	3.41	20	22.73	41	46.59	22	25.00	2	2.27
11. Your part-time work experiences (not Placement Training).	19	21.59	16	18.18	21	23.86	29	32.95	3	3.41
12. Your contacts with the program administrators.	8	9.09	29	32.95	35	39.77	13	14.77	3	3.41
13. Your extra-curricular activities.	11	12.50	25	28.41	29	32.95	20	22.73	3	3.41

TABLE LII

Former Students Response, by Category, to Thirteen Statements Dealing with Their Understanding of and Relationship to the Floral Industry

Statement Number	1			2			3			4			No Response		
	Graduates		Dropouts	Graduates		Dropouts	Graduates		Dropouts	Graduates		Dropouts	Graduates		Dropouts
	N		N	N		N	N		N	N		N	N		N
1.	3	4.84	1	9	14.52	5	17	27.42	7	29	46.77	13	4	6.45	0
2.	2	3.23	0	8	12.90	3	27	43.55	10	23	37.10	13	2	3.23	0
3.	2	3.23	3	5	8.06	1	11	17.74	11	42	67.74	11	2	3.23	0
4.	4	6.45	5	8	12.90	3	20	32.26	10	27	43.55	8	3	4.84	0
5.	5	8.06	1	11	17.74	7	31	50.00	11	13	20.97	7	2	3.23	0
6.	1	1.61	3	11	17.74	5	11	17.74	7	27	43.55	11	12	19.35	0
7.	8	12.90	3	22	35.48	9	24	38.71	7	7	11.66	6	1	1.61	1
8.	1	1.61	2	19	30.65	6	22	35.48	11	18	29.03	6	2	3.23	1
9.	2	3.23	1	23	37.10	11	25	40.32	5	10	16.13	9	2	3.23	0
10.	2	3.23	1	13	20.97	7	31	50.00	10	14	22.58	8	2	3.23	0
11.	13	20.97	6	13	20.97	3	16	25.81	5	17	27.42	12	3	4.84	0
12.	4	6.45	4	23	37.10	6	24	38.71	11	9	14.52	4	2	3.23	1
13.	8	12.90	3	19	30.65	6	21	33.87	8	12	19.35	8	2	3.23	1

62 Graduates
26 Dropouts

importance with which the students view it. If it is low on the ratings it only means the students place comparatively less value on it. It does not necessarily indicate they think it is unimportant.

In several different tabulations the same five statements appeared, always ranked in the top five, but sometimes in a different order. They were:

1. Received the kind of training which enabled us to get a job in the field of my choice,
2. Gained a better understanding of myself, and my abilities and goals,
3. Became acquainted and friendly with industry people,
4. Learned more about industry opportunities and requirements, and
5. Received the encouragement, challenge and sense of success necessary to continue my education after leaving the program.

The least two important statements, as ranked by all former students were:

1. My part-time work experience
2. My contacts with the program administrators.

Again the practical aspect--the training, is always most important to the students. They feel it is important too to meet industry people. They do this on Field Trips and at Floral Conventions. Through these same means they also learn about industry opportunities and challenges.

Tables LI and LII are basically the same but the second breaks the former students' responses down by the Graduate and Dropout categories.

The responses in this section, as shown in Table LIV can serve as an insight to program instructors pointing out the relative importance of the statements.

TABLE LIII

Former Students Ranking By Percentages Of the Extremely
Important Relationships or Concepts

Questions	Slightly Important Considerably Important Extremely Important		Considerably and Extremely Important		Extremely Important
	N	%	N	%	%
3. Receiving the kind of training which enables you to get a job in the field of your choice.	81	92.05	75	85.23	60.23
1. Gaining a better understanding of yourself, your abilities and your goals.	80	90.91	66	75.00	47.73
6. Becoming acquainted with industry people and developed a friendship or appreciation for them.	82	93.18	66	75.00	43.18
2. Learning more about industry opportunities and requirements.	84	95.45	73	82.95	40.91
4. Receiving the encouragement, challenge, and sense of success necessary for you to continue your education after leaving the program.	76	86.36	65	73.86	39.77
11. Your part-time work experiences (not Placement Training).	66	75.00	50	56.82	32.95
8. Developing a kinship, or feeling, for the industry which had led to greater understanding.	82	93.18	57	64.77	27.27
10. Your informal discussions with the instructors.	83	94.32	63	71.59	25.00
5. Discovering new fields of interest due to classroom subject areas.	80	90.91	62	70.45	22.73
13. Your extra-curricular activities.	74	84.09	49	55.68	22.73
9. Your informal discussions with fellow students.	83	94.32	49	55.68	21.59
7. Developing an appreciation of the industry through its periodicals.	75	85.23	44	50.00	14.77
12. Your contacts with the program administrators.	77	87.50	48	54.55	14.77

TABLE LIV

Former Students Ranking of the Importance of Statements Concerned
with Their Understanding of or Relationship to the Floral Industry

Statements	Ranked Most to Least Important*
3. Receiving the kind of training which enables you to get a job in the field of your choice.	1st 295
2. Learning more about industry opportunities and requirements.	2nd 279
1. Gaining a better understanding of yourself, your abilities and your goals.	3rd 271
4. Receiving the encouragement, challenge, and sense of success necessary for you to continue your education after leaving the program.	4th 261
6. Becoming acquainted with industry people and developed a friendship or appreciation for them.	5th 254
8. Developing a kinship, or feeling, for the industry which has led to greater understanding.	6th 248
13. Your extra-curricular activities.	248
7. Developing an appreciation of the industry through its periodicals.	7th 242
9. Your informal discussions with fellow students.	8th 237
5. Discovering new fields of interest due to class-room subject areas.	9th 230
10. Your informal discussions with the instructors.	10th 228
12. Your contacts with the program administrators.	11th 221
11. Your part-time work experiences (not Placement Training).	12th 218

* The rankings are the total numerical response to each question by both graduates and dropouts.

The data in Table LV indicates that 88.24% of all former students would recommend the Commercial Floriculture Technical Program to a friend considering entering the industry. The most positive endorsement, 98.09% is from industry persisters; the least, 71.88%, is from the non-persisters. This type of question is often used to determine a group's opinion on some subject.

Another indication of the former students opinion of the program, found in the data in Table LVII, is that an average of 89.74% of all respondents felt the program gave them a good floricultural background. The highest single category of response again was the persisters with 94.23%; the lowest the non-persisters with 79.17%.

Objective #11, students' opinion of the program is answered in the affirmative in Tables LV and LVI.

However, Hypothesis #3, ". . . there will be a diversity of opinion from former students on the evaluation of the total program." There was a great deal of opinion but there was not the diversity of opinion expected by the author--at least not in significant numbers. Overall there was a unanimity of opinion concerning the program.

The response to the question "Please make any comments about the Commercial Floriculture Technical Program which may help in its evaluation and improvement" brought 105 responses. Many students spent a great deal of time and thought in their one, two and three-page responses. Generally the responses were quite positive and constructive. There was the realization through the comments that even though the program is good there are some serious flaws in it. The following table (Table LIX) is a compilation of the responses--with the flattering

TABLE LV

Feelings of Former Students Concerning Recommending the Commercial Floriculture Technical Program to Friends Considering Entering the Industry--Persisters and Non-persisters

Total Responses*				Persisters				Non-persisters			
Yes		No		Yes		No		Yes		No	
N	%	N	%	N	%	N	%	N	%	N	%
75	88.24	10	11.76	51	98.08	1	1.92	23	71.88	9	28.13

*All percentages were computed on the total number of responses to each question.

TABLE LVI

Feelings of Former Students Concerning Recommending the Commercial Floriculture Technical Program to Friends Considering Entering the Industry--Graduates and Non-graduates

Total Response				Graduates				Non-graduates			
Yes		No		Yes		No		Yes		No	
N	%	N	%	N	%	N	%	N	%	N	%
75	88.24	10	11.76	55	93.22	4	6.78	20	76.92	6	23.08

TABLE LVII

Feelings of Former Students on Whether or Not the Commercial
Floriculture Technical Program Gave Them a Good
Floricultural Background (Persisters and Non-persisters)

Total Responses*				Persisters				Non-persisters			
Yes		No		Yes		No		Yes		No	
N	%	N	%	N	%	N	%	N	%	N	%
70	89.74	8	10.26	49	94.23	3	5.77	19	79.17	5	20.83

*All percentages were computed on the total number of respondents to each question.

TABLE LVIII

Feelings of Former Students on Whether or Not the Commercial
Floriculture Technical Program Gave Them a Good
Floricultural Background (Graduates and Non-graduates)

Total Responses*				Graduates				Non-graduates			
Yes		No		Yes		No		Yes		No	
N	%	N	%	N	%	N	%	N	%	N	%
70	89.74	8	10.26	53	92.98	4	7.02	17	80.95	4	19.05

*All percentages were computed on the total number of respondents to each question.

TABLE LIX

A Compilation of Former Student Responses:
How the Commercial Floriculture Technical Program
Can Be Evaluated and Improved

Subject	Responses	
	N	%
1. Business		
More Business Courses		
How to sell, how to run a business, more practical business	11	10.40
2. Design	24	22.80
More design	12	
Use more permanent flowers	1	
Less design	1	
Separate advanced and beginner students	4	
Smaller classes, more individual attention	3	
More practical	1	
More demonstrations by guest designers	1	
Instructors not to display favoritism	1	
3. Production		
More plant identification	1	1.00
4. General Courses	61	58.00
Make more practical	5	
Bring in industry speakers	2	
Longer classes, longer program, give Associate Degree	3	
Longer classes, learn more	4	
Poor instructors	6	
Do not have graduate students teach course	2	
Get rid of high schoolish courses	14	
Get rid of irrelevant courses, specialize	9	
2 and 4 year courses should be more interchangeable for transfer of credit both in and out. More optional courses	7	
Separate Retail and Production students	1	
Suggest people keep text books - need and use them later	1	
Program is better for the experienced	2	
Need a good background in Botany and Plant Diseases	1	
Phase out disinterested students early	1	
Field trips are invaluable	2	
Open a flower shop and let students operate it	1	
5. Placement Training	8	7.60
More help in finding and keeping jobs needed.		
Counseling.	5	
Check employers more closely; some won't train students	1	
Do not let anyone work in a family shop	1	
Drop placement training requirement	1	

comments omitted. Also included in the table are the responses to question 17, page 6, and question 14, page 7, as they are so similar.

The areas of program strengths have previously been pointed out but some other areas should be noted. There seems to be two major themes through the suggestions. One is to narrow the course offering and concentrate on horticultural related courses--and the more practical and vocational the better. This course of action would involve dropping required courses such as: AT (Effective Study and Reading) and ATL (Writing and Speaking) and electives such as Psychology, Entomology and Marketing Agricultural Products. It would also mean adding retail and production related courses and decreasing the size of the floral design classes. This move would be in accordance with the wishes of many of the responding former students.

The other general group of suggestions involved more extensive program changes. The idea is to develop it into a challenging full two year Associate Degree Program. More regular four year business and marketing courses would be added as well as the option to study in other areas. All courses would be strengthened and their credits transferable to the four year program or to other colleges or universities.

It seems there is a wide divergence of opinion as to how the Commercial Floriculture Technical Program should be operated and the two diametrically opposing views represent an irreconcilable philosophical difference. But one thing is certain, there is interest in and desire for program improvement amongst the former students.

Employment History of Former Students

The purpose of this questionnaire section sent to all former students was to learn about their employment: their movements horizontally and vertically, their degree of mobility, their salary scale, their persistence in the industry and their reasons for changing jobs. The students were to fill out all the information requested about each job since leaving Michigan State University, beginning with their present job and moving backwards. They were to give the beginning and ending dates of each job and the salary at the beginning and at the ending of each job.

They were also requested to note the most important, the less important and the least important reason for leaving each job.

Another purpose of this section was to answer Hypothesis #1. There is a direct relationship between program and occupational persistence.

Of all sections of the questionnaire, this one was the most poorly filled out. Many questions were left blank--53.99% of the non-persistent dropouts did not complete this section as well as 35% of the non-persistent graduates. Therefore the numbers used to average the various responses are often different.

Table LX gives the job status of all former students by category. It is interesting to note that the full-time employment rate is almost 25% higher in graduates than in dropouts and that of the 99 former students, only one was unemployed.

According to the data on Table LXI, graduate persisters have held fewer jobs than the graduates who were no longer working in the floral

TABLE LX
Job Status of Former Students

Job Status of Persisters and Non-persisters	Dropouts		Graduates		Total for Em- ployment Status	
	N	%	N	%	N	%
<u>Persisters</u>	12		47		59	
Self-employed	2	16.67	8	17.02	10	16.95
Full-time Employment	7	58.33	34	72.34	40	67.80
Part-time Employment	3	25.00	4	8.51	8	13.56
Military Service	-	---	1	2.13	1	1.69
College Student	-	---	-	---	-	---
Total		100.00		100.00		100.00
<u>Non-persisters</u>	19		21		40	
Self-employed	1	5.26	-	---	1	2.50
Full-time Employment	10	52.63	14	66.67	23	57.50
Part-time Employment	-	---	-	---	-	---
College Student	3	15.79	-	---	4	10.00
Military Service	2	10.53	-	---	2	5.00
Housewife (Unemployed)	2	10.53	6	28.57	-	---
Unemployed	1	5.26	1	4.76	-	---
Total		100.00		100.00		100.00

TABLE LXI

The Average Number of Full Time Jobs Held by Former Students Since Leaving the Program
and the Average Length of Time Spent in Each Job

Persisters				Non-Persisters			
Graduates		Dropouts		Graduates		Dropouts	
# Jobs Held	Months in Each Job	# Jobs Held	Months in Each Job	# Jobs Held	Months in Each Job	# Jobs Held	Months in Each Job
2.69	25.6	1.9	22.8	3.2	18.7	3.00	20.4

industry, 2.69 as compared to 3.2 jobs. The persistent dropouts averaging 1.9 jobs since leaving the program. The non-persistent dropouts averaged the most jobs held, 3.0, since leaving the program.

The persistent graduates averaged 25.6 months in each job compared with 22.8 for persistent dropouts, 20.4 for non-persistent dropouts and 18.7 for non-persistent graduates. In each job the persistent graduates had a monthly salary increase averaging \$142.61. Vocationally the most stable group of former students is the graduate persisters, the least stable, the non-persisters.

Between the time the persistent graduates leave M.S.U. and their present job, their average monthly salary increase was \$295.71. The highest monthly salary increase recorded by this group of former students was \$1,021 and that was in a family owned business. These figures do not include fringe benefits.

Persistent graduates have held an average of 2.69 jobs since leaving M.S.U. and the average salary increase between jobs was \$102.00. This figure only includes the 20 job changes where there was a salary increase. There were 10 changes in which the student took a lesser paying job. Many job changes didn't involve a salary increase.

There is a definite positive relationship between program and occupational persistence. The persistence rate for program graduates is 69.12%, whereas 39.71% of the dropouts remain in the flower industry.

The previous position and salary information was gained from the employer's questionnaire and is located in the section by that name.

More detailed salary information is presented in Table LXII. The most number of former students of all categories were in the \$7,000-\$8,500 salary range. The persistent dropouts have the highest mean salary, \$7,343, the non-persistent dropouts, the lowest, \$5,860. Of the graduate persisters, 11.5% were earning over \$10,000 annually as compared to 9.1% of the graduates who do not remain in the industry. There are more persistent graduates earning high salaries and fewer earning low salaries than were any other category of student. Persistent dropouts had a \$275.00 higher annual income. This was due to several factors: three students were working in family operations and were being paid above average salaries. Also, there were only eleven students in this category, too small a number when combined with the above factor from which to draw conclusions.

The most important reason given for leaving a job and the one given by 25% of the respondents was "Advance to a better job." Another reason given by 12% of the respondents was "Didn't like employer"; "Working conditions" was ranked next followed by "School." Low wages was ranked 12th, preceded by Military, Starting Own Business, Moving, Marriage, Pregnancy, Bankruptcy and Miscellaneous.

There were only two reasons which were ranked under "Low Wages," as the most important reasons for leaving a job. They were "Didn't like employees" and "Didn't like the work."

Of the Less Important reasons for leaving a job, 30% of the respondents ranked "Working conditions" as number one. Next was low wages, marked by 20% of those responding.

TABLE LXII

Present Salaries of Employed Former Students

Salary Ranges	Persisters				Non-Persisters				Total	
	Graduates		Dropouts		Graduates		Dropouts			
	N	%	N	%	N	%	N	%	N	%
Less than 4,000	3	6.8	1	9.1	3	17.7	1	7.7	8	9.4
4,000-5,500	5	11.3	2	18.2	1	5.9	2	15.4	10	11.8
5,500-7,000	12	27.3	0	--	0	--	1	7.7	13	15.3
7,000-8,500	9	20.5	4	36.4	3	17.7	1	7.7	17	20.0
8,500-10,000	1	3.0	1	9.1	3	17.7	1	7.7	6	7.1
10,000-11,500	2	4.6	1	9.1	9	--	0	--	3	3.5
11,500-13,000	2	4.6	0	--	0	--	0	--	2	2.4
13,000-14,500	1	2.3	0	--	1	5.9	0	--	2	2.4
14,500-16,000	0	--	0	--	0	--	0	--	0	--
Over 16,000	0	--	0	--	0	--	0	--	0	--
Response Omitted	9	20.5	2	18.2	6	35.3	7	53.9	24	28.2
TOTALS	44		11		17		13		85	
Mean Salaries	\$7,068		\$7,343		\$7,071		\$5,860			
	Based on 35		Based on 11							

TABLE LXIII

A Ranking of Reasons Former Persistent Graduates Left Their Jobs

Reasons for Leaving Job									
Reasons	Most Important			Less Important			Least Important		
	Rank	Reason #	%	Rank	Reason #	%	Rank	Reason #	%
Advanced to a better job.	1	5	25	1	6	30	1	6	35
Didn't like employer.	2	1	12	2	3	20	2	3	20
Working conditions.	3	6	9	3	2	13	3	5	15
School.	4	9	6	3	5	13	4	1	10
Military.	5	8	4	5	7	10	4	7	10
OTHER				6	1	7	6	2	5
Starting own business.	5	Other	4	7	4	3	6	4	5
Moving.	5	Other	4	7	Moving	3			
Marriage.	5	Other	4						
Pregnancy.	9	Other	3						
Bankruptcy.	9	Other	3						
Miscellaneous.	9	Other	3						
Low wages.	12	3	2						
Didn't like employees.	13	2	1						
Didn't like work.	13	4	1						
Required more training than I had.	15	7	0						

The Least Important reasons for persistent graduates leaving their jobs was:

1. Working Conditions.
2. Low wages.
3. Advanced to a better job.
4. Didn't like employer.
5. Required more training than I had.

Table LXIV is similar to Table LXV except it covers only persistent dropouts and their reasons for having left their jobs. The ranked reasons they offer are:

1. Working conditions and moving.
2. Employer, low wages, better job, school, marriage and pregnancy.

Their Least Important reasons for finding a new job were:

1. Didn't like the work.
2. Employer, employees, military and school.

There were 16 non-persistent dropouts in this study. Table LXV lists the reasons these former students left their jobs. In order of importance they are:

1. Low wages.
2. Employer, the work, better job, military, school and to start own business.

This was the only group of students to give low wages as an important reason for changing jobs. Perhaps this is the reason they were no longer in the floral industry. The next most important reason for changing jobs was:

TABLE LXIV

Compilation of Reasons Given by Persistent Dropouts for Leaving Their Jobs

Reasons for Leaving Jobs	Most Important	Less Important	Least Important
1. Didn't like employer.	10%		16%
2. Didn't like other employees.	--		16%
3. Low wages.	10%	29%	--
4. Didn't like the work	--	14%	25%
5. Advanced to better job.	10%	29%	--
6. Working conditions.	20%	--	--
7. Required more training than I had.	--	14%	8%
8. Military.	--	--	16%
9. School.	10%	14%	16%
OTHERS:			
10. Marriage.	10%		
11. Moving.	20%		
12. Pregnancy	10%		

TABLE LXV

Compilation of Reasons Given by Non-Persistent Dropouts for Leaving Their Jobs

Reasons for Leaving	Most Important	Less Important	Least Important
1. Didn't like employer.	13%		9%
2. Didn't like other employees.	--	--	9%
3. Low wages.	25%	27%	36%
4. Didn't like the work.	13%	9%	--
5. Advanced to better job.	13%	9%	--
6. Working conditions.	--	36	
7. Required more training than I had.	--	9%	18%
8. Military.	13%	--	--
9. School.	13%	9%	--
OTHERS:			
To start own business.	13%		

1. Working conditions.
2. Low wages.

Interestingly enough, 36% claimed that low wages was the least important reasons for leaving their job.

CHAPTER V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Summary

Purpose of the Study

This study was an evaluation of the retail segment of Commercial Floriculture Technical Program at Michigan State University. The hypotheses and objectives of the study were stated in Chapter I.

Method of Conducting the Study

The evaluation was conducted by means of a follow-up survey of all former retail oriented students who completed two or more terms of academic work in the class of 1964, 1965, 1966, 1967 or 1968.

A telephone and mail survey was conducted to locate and determine the student population of the study. The surveys located all but one student; another student chose not to participate in the study for a total population of 99. Of the 88 or 88.88% of the students who responded to the questionnaire, 62 were program graduates.

Forty-one employers of former students were asked to participate in this evaluation and 32, or 78.04% did.

Three different questionnaires were devised and tested and sent to persisters, non-persisters and employers of former students. One month after the first questionnaire was sent out a reminder questionnaire

instrument was mailed to the non-respondents. Three reminder letters were sent to insure a good response to the survey. The total response of both former student and employer was 85.71%.

Summary of Data

Persistent former students considered the following skills 'Considerably Important' or 'Critically Important' in the performance of their job. The skills are ranked in the descending order of importance. They are the ability to:

- 31 Plan and think ahead.
- 48. Get along with employees.
- *29. Successfully deal with the public.
- *32. Be innovative.
- *42. Communicate well verbally.
- *11. Recognize and use good color combinations.
- 30. Understand the importance of public relations.
- 47. Maintain a good relationship with both employee and employer.
- *9. Interpret customer's wishes, design-wise.
- 13. Price permanent and dried arrangements profitably.

The five skills listed above which are marked by an asterisk were also listed by employers as being in the most important skills needed by employers for the performance of their job. The other five skills they listed were, the ability to:

- 12. Price fresh arrangements profitably.
- 21. Recognize and use available supplies and materials.
- 14. Appreciate the business aspects of design.

- 6. Design at a good speed.
- 49. Maintain worker interest and enthusiasm.

The persistent former students learned most about 10 skills judged 'Considerably Important' or 'Critically Important' in placement training, 17 skills in the Agriculture Technology classes and 20 skills outside M.S.U. The skills learned outside M.S.U. relate mainly to floral design, a skill which must be developed through practice.

The following skills are those rated 'Critically Important' by persistent former students. They are the ability to:

- 29. Meet and deal with the public.
- 31. Plan and think ahead.
- 48. Get along with employers.
- 42. Communicate well verbally.
- 30. Understanding public relations.
- 3. Design funeral arrangements.
- 6. Design at a good speed.
- 9. Interpret the customer's wishes, design-wise.
- 13. Price permanent and dried arrangements profitably.
- 10. To sell what you're "heavy on."

The employers also listed six of the same skills as did the students but in addition considered the following to be 'Critically Important.' They are the ability to:

- 11. Recognize and use good color combinations.
- 12. Price fresh arrangements profitably.
- 14. Design profitably.
- 31. Plan and think ahead.

Employers rated the student's ability to perform their jobs at slightly better than satisfactory. The highest mean rating of any one skill was 3.54 of a possible 4.0, the lowest was 2.68. Thirty-one percent of the employers rated the former persistent students as having Outstanding Ability, and 3.3% of employers rated them as having Little or No Ability. So it appears the employers were quite satisfied with their student employees.

Thirty-two percent of the respondents stated they felt they lacked the necessary skills in floral design. They felt they lacked the necessary practice to gain speed and confidence in themselves. About one-fourth (28.57%) of the respondents felt they lacked enough business and/or management training such as selling, buying, financial management, advertising and credit. The next category of greatest response was merchandising which was followed by knowledge of house plants and miscellaneous.

The instructional objectives of the two floral design courses are listed as skills #1-21 on the first page of the persistent former student questionnaire. According to the employer responses, the mean rating on all former students' skills was better than satisfactory. According to student evaluations many felt they lacked design skills after completion of the Commercial Floriculture Technical Program. The objective cannot be given a positive or negative answer. It appears that many of the objectives of the design courses were met to a large degree but many of the skills that require practice, need more emphases.

The opinions of employers and employees differ very little on the importance of the skills which are necessary to do their job. In terms

of floral design related skills, the differences are listed below in descending order.

- *16. Advising customers on horticultural problems.
- *15. Plan and estimate costs for large parties.
- 7. Ability to design creatively.
- *14. Ability to design profitably.

Of the 21 skills listed in this section of the questionnaire, former students' and employers' ratings are very similar on 17 of them. The mean average difference on any comparison is not over .58 of one point.

The following differences appeared in the shop management area:

- *38. Understand the wire services.
- *36. Practicing stock rotation.
- *37. Understanding credit.
- 26. Ability to price non-perishables.

(*Employers felt this skill was more important than did the former students.)

Of the 28 skills listed in this section of the questionnaire former students and employers agree basically on the mean ratings of 24 skills. The greatest difference is not over .41 of one point. There is greater disagreement on rankings between students and employers in the design area than there is in the management area.

The difference in the skill rankings was not considered significant unless the mean difficulty by .33 of one point or more. This was based on the 4 point scale of importance.

Ninety-three percent of all former students participated in the Floral Industry Conventions, 88.6% in both the Fall Mum Sale and Class Field Trips, 84.0% in the Floriculture Forum, 80.6% in the Bridal Show, 68.1% in Industry Groups, 60.6% in the Annual Spring Field Trip and the Ag. Tech. Organizations, 43.1%. The participation rate for persisters was about 10% higher than the average participation rate for all students.

Most all, 84.1%, of all former students rated the Class Field Trips either Very or Extremely Beneficial, 83% ranked the Spring Field Trip the same way as did 77.3% for Industry Conventions, 76.1% Bridal Show and 48.9% for the Floriculture Forum.

Of the persisters:

- 92.7% participated in the Fall Mum Sales.
- 94.5% participated in the Spring Field Trip.
- 90.9% participated in the Class Field Trips.
- 94.5% participated in the Bridal Show.
- 89.0% participated in the Floriculture Forum.
- 54.5% participated in the Ag Tech. Organization.
- 8.0% participated in the Industry Groups.
- 98.1% participated in the Industry Conventions.

There is an extremely high correlation between persistence and participation in the available educational activities.

The most popular aspects of the program were classroom outside speakers, placement training, practical class projects, the closeness of students with faculty and the practicality of the program. Most

students liked the practical or vocational and would rather work with their hands than do research. The least popular aspects of the program are program and placement guidance, quality of instruction and the required courses.

Receiving practical vocational training, learning more about the industry and its opportunities and gaining a better understanding of yourself and your goals and abilities were the most important of the 13 statements to the former students. In most every type of comparison the same opinions as those above surfaced.

Former students opinion of the program is excellent as evidenced by the fact that 98.08% of the persisters and 71.88% of the non-persisters or 93.22% of the graduates and 76.92% of the dropouts stated that they would recommend the program to a friend. Fortunately the former students can be objective in the evaluation of the program--seeing it as good, but needing improvement.

The main reason former students left the program is due to grades or academic suspension. Forty-four percent of the dropouts left for this reason; 22% of the dropouts transferred to a different program at Michigan State University or to another college or university. Nineteen percent left due to a combination of reasons such as lack of challenge, disappointments in courses and instructors, didn't like the flower industry and one person was homesick. Eight percent of the dropouts were unhappy about several aspects of placement training, 5% left due to health or marriage and 2% went into the service.

There was not the diversity of opinion expected by the author. There was a 26.20% difference of opinion between persisters and non-persisters on recommending the program: 94.23% of the former group as opposed to 79.17% of the latter group stated that they would recommend the program to a friend. Non-persisters were the least enthusiastic of all categories of students. Many had been disappointed with some phase of the program. The degree of positive feeling about the program was encouraging.

Program graduates who are now working in the floral industry change jobs on the average of every 25.6 months and they are the most stable of the four groups. With each job change the average salary increase is \$142.61 per month. Between their first job since leaving Michigan State University and currently, they have averaged a monthly salary increase of \$295.71. Eleven and one-half percent of the persistent graduates were earning over \$10,000 annually.

Program dropouts changed jobs more often, every 22.8 months, but less often than graduate non-persisters, who changed jobs every 18.7 months. The non-persistent dropouts averaged 20.1 per month in each job and are the lowest paid group of former students; the persistent graduates the highest paid.

The graduates most important reason for leaving a job was to advance to a better job. Low wages was not a significant factor in the move, but with non-persistent dropouts, low wages was the most important reason for changing jobs.

Of the survey population of 99 students, 68 or 68.68% graduated and 47 or 47.47% of the total were working in the floral industry. The question 'Why did you leave the flower industry?' was not asked directly, but the answers to it were given in the employment history and the program improvement sections of the questionnaire. Of the 34 responding non-persisters, 27 wrote in comments: the reasons they listed for leaving the floral industry, in descending order were:

- | | |
|--|-------|
| 1. Low pay | 25.9% |
| 2. Marriage and family | 22.2% |
| 3. Not challenging enough | 11.1% |
| 3. College | 11.1% |
| 5. Employer dishonest, broke promises | 7.4% |
| 6. Service | 3.7% |
| 6. Didn't like it | 3.7% |
| 6. Too far from florist | 3.7% |
| 6. Florists not liberal enough | 3.7% |
| 6. Work too restrictive--too demanding | 3.7% |
| 6. Health | 3.7% |

The grade point average of all persisters was 2.69, that of the non-persisters was 2.45, a difference of only .24. A difference too small to draw conclusions from. The greatest difference in G.P.A. is between the persistent and non-persistent dropouts--a difference of .60. Amongst the graduates, the non-persisters have a higher G.P.A. than the persisters

Program graduates hold their jobs longer, by three months than persistent dropouts. The comparison doesn't hold true with non-persisters as graduates hold more jobs than do the dropouts--by a 2 of a percent.

Almost 15% more male than female students persist in the floral industry. The persistence rate includes part-time industry workers, of which one male and seven were female. If part-time workers were not included in the figures, the male persistent rate would be much higher.

The persistence rate was almost one-third greater for students from florist families than with students from non-florist families. The persistence rate for the former is 85.19%, the latter, 59.60%.

Implications of the Study

The implications of this study are the result of homogenization of what was learned in the literature review, previous experiential knowledge and the findings of this survey.

1. It would be most beneficial if there were more evaluations of this program. A minimum of one should be conducted annually--just before graduation. Preferably two student evaluations could be conducted each year--the first one after the students return from placement training, the second preceding graduation. Many students, of all categories, expressed appreciation for being asked to assist in this evaluation for they felt there were many areas which needed improvement.

2. This study also pointed out quite clearly the need for more student counseling both in the areas of academics and placement training.

A large number of students complained that "no one cared" and that "I was left on my own on placement." As the program expands it becomes even more critical that we don't become impersonal and lose sight of the worth of the individual

3 It would be well to look closely at the course offerings in the light of bringing the program more in line with the needs and desires of employers and experienced former students. Perhaps some courses should be dropped and new ones added. Since 60% of the persisters are in management to some extent, more business related courses should be added. The students also need more floral design experience in a less crowded environment

4. More practical classroom assignments rather than "busy-work" should be provided--projects, if possible that relate to the interest of the students.

5 This study should cause everyone involved with the program to take a second look at the program objectives and how they are being implemented. It should cause each instructor to do some soul-searching as to the effectiveness of his teaching.

Recommendations for Future Study

1. Because of the many student "open-ended" responses, and the great interest and enthusiasm exhibited in them the responses should be more carefully studied. Perhaps there are some program improvements which could result and the student be given the credit.

2 Again because of the students' interest, study the possibility of an annual mailer to former students--a chit-chat light newsy mimeo.

3 Because such a large percent of students transfer out of the program, with a resulting loss of credit, a study should be undertaken to see if this situation can be rectified

4. A large number of persistent students are receiving low wages. An in-depth study of the wage scale in the florist industry would be most beneficial. The study could and should compare with non industry wages

5 Many non-persisters are housewives. A study could be undertaken to determine their interest in returning to the industry--even on a part-time basis. Perhaps a two or three day refresher workshop could be provided as an incentive

Conclusions

1. Since grades were the cause of 44% of the dropouts, perhaps the admission standards of the program are too low. Several surveys have noted that students with either the highest or the lowest G.P.A. have a tendency to drop out of vocational education programs. Perhaps high school G.P.A. could be one admission factor

2 Twenty-two percent of the dropouts transferred to four year institutions. Better initial counseling could eliminate part of the negative feelings sometimes involved with loss of time and credits when transferring

3. Due to the fact that 60% or more of the persistent former students are in some phase of management in a retail shop, more business courses should be offered to the students

4. Since 38.89% of the employers hire new employees "off the street," there is a great demand for retail flower shop help. Perhaps a three term vocational course could be established to help meet the labor demands.

5. The floral industry wage scale is below that of other industries. Store managers average \$8,784.00 annual salary--at least \$2,000 below that paid other store managers with comparable responsibilities. It is the major reason for non-persister dropouts leaving the industry. It is also a reason some go into business for themselves.

6. Employers are very satisfied with the job former students in their employ are doing which means the program must be somewhat successful.

7. An effort should be made to indoctrinate or enlighten prospective employers concerning placement students. They need to be made aware of the fact that the students are there to learn. That they are not even upon graduation, skilled employees, but rather trained in the basic skills.

8. Everything should be done to make the program more practical and interesting for the student.

9. More emphasis needs to be placed on communication skills--writing and speaking as they relate to a flower shop. Most of these skills are now learned on placement training.

10. A re-evaluation of the management courses are needed. According to the survey there are some less important skills which are being covered in too great a detail.

11. The educational activities are extremely beneficial to the students--especially the ones which involve practical industry experience. A new method needs to be found to finance the Spring Field Trip and finance more shorter Class Field Trips.

12 To stimulate the student and perhaps reduce the dropout rate, students who have over a 2.50 G P A should be permitted to take other than program courses. These could be optional, additional or in lieu of the regular program courses

13 Placement training should be strengthened, not only through better screening of placement sites but by funding to allow the coordinator at least two visits to each student during placement training.

14. Have a semi-annual or annual evaluation seminar to discuss the problem areas brought to light by this study for the present students' opinions

15 Consider the establishment of a retail flower shop--open on a part-time basis, six months a year. This would be an excellent teaching tool.

16. To gain more practical experience, establish "design teams" to give demonstrations for interested groups. It would also be excellent public relations.

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APPENDICES

A P P E N D I X A

MICHIGAN STATE UNIVERSITY EAST LANSING • MICHIGAN 48823

COLLEGE OF AGRICULTURE AND NATURAL RESOURCES
INSTITUTE OF AGRICULTURAL TECHNOLOGY • AGRICULTURE HALL

August 3, 1972

Donald A Dunbar
Horticulture Department
109 Horticulture Building
Campus


Dear Don:

I was pleased to learn that you will be conducting a follow-up study of Commercial Floriculture graduates as part of your Ph.D. program. The Institute of Agricultural Technology needs information from and about all of its graduates. To date, only the graduates of the Landscape and Nursery Program have been studied in depth. Your study will be a welcome addition.

In technical education it is particularly important that the training be tied very closely to the needs of the industry. Information from graduates and from employers can help us recognize changes in the industry and will facilitate timely adjustments in the curriculum. The study you are undertaking will provide information to update the Commercial Floriculture Program.

The staff of the Institute will be pleased to make the Institute's records available to you and to give any other assistance we can.

Sincerely,



Harold J Ecker, Director
Institute of Agricultural Technology

HJE/psp

APPENDIX B

MICHIGAN STATE UNIVERSITY EAST LANSING • MICHIGAN 48821

COLLEGE OF AGRICULTURE AND NATURAL RESOURCES • DEPARTMENT OF HORTICULTURE • HORTICULTURE BUILDING

July 28, 1972

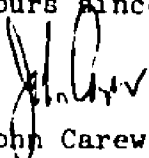
Mr. Donald Dunbar
Department of Horticulture
Campus

Dear Mr. Dunbar:

The Commercial Floriculture program is one of the oldest and most successful of the programs offered under the Institute of Agriculture Technology. We are continually striving to improve the quality of the instruction in this increasingly important subject matter area.

For maximum teaching effectiveness, it is necessary that we continually evaluate the curriculum and also each individual course. I am pleased that you have chosen for your Ph.D. thesis a study of the opinions and attitudes of recent graduates of this program. It will be useful not only in improving the curriculum but also will serve as a guideline for future studies in other programs.

Yours sincerely,



John Carew, Chairman
Department of Horticulture

JC:sr

A P P E N D I X C

MICHIGAN STATE UNIVERSITY EAST LANSING MICHIGAN 48824

COLLEGE OF AGRICULTURE AND NATURAL RESOURCES

OFFICE OF THE DIRECTOR OF RESIDENT INSTRUCTION - AGRICULTURE HALL

July 31, 1972

Mr. Don Dunbar
Horticulture Department
Campus

Dear Don:

We are pleased that you are conducting a follow-up study and evaluation of the commercial floriculture program in the Institute of Agricultural Technology. I feel that there is a very real need for us to know more about students who are enrolled in each of our programs. We especially need information on career development and job placement after graduation. We could use this information in working with prospective students, guiding our present students, and providing information to counselors and others who work with young people. I am particularly interested in getting information on students who have participated in this program and then transferred to a four-year degree program at Michigan State University or at other institutions.

In the meantime, if I can be of assistance to you in any way possible, please feel free to call on me.

Sincerely,

Norman A. Brown
Assistant Director

NAB:cs

A P P E N D I X D

MICHIGAN STATE UNIVERSITY EAST LANSING • MICHIGAN 48824

COLLEGE OF AGRICULTURE AND NATURAL RESOURCES • DEPARTMENT OF HORTICULTURE • HORTICULTURE BUILDING

In about two weeks, you will be sent a short questionnaire.

It's basic purpose is to improve the Ag. Tech program in Floriculture.
We hope you will give this questionnaire your full attention and support
and return it quickly.

But to insure greater accuracy and speed, please fill in the following
blanks.

My name is _____

I work for (Mr. or Mrs.) _____

He is the company (owner or manager) _____

Company name _____

Company address _____

Company phone _____

I live at _____

My local home phone number is _____

Please return this sheet in the provided stamped return envelope.

Sincerely,

The Department of Ag. Tech.

jt

A P P E N D I X E

Second Reminder -- to update the Mailing List (This page was attached to the form in Appendix D.)

Is your advise ever needed! WOW!

We know the Ag. Tech. Commercial Floriculture program can be improved
. can't it?

So how about filling in the blanks on the attached sheet -- even if you aren't working in the floral industry. Then, just return it in the stamped, addressed envelope. What could be easier?

If you have already mailed yours in, we'll treat you to the .08 stamp on the envelope.

Thank you.

A P P E N D I X F

LIST OF STUDENTS AND RETAIL FLOWER SHOP OWNERS OR MANAGERS WHO TESTED THE QUESTIONNAIRE

STUDENTS:

Pam Horner	Class of 1971
Peg Lepo	Class of 1972
Virgie Trowbridge	Class of 1973
Dennis Crum	Class of 1973
Ron Whitefield	Class of 1973
Jean Kolar	Class of 1972
Inge Mussche	Class of 1973
David McKillan	Sophomore

RETAIL FLORISTS:

Gary Aube, Mgr.	Barnes Floral, Lansing
Jerry McKinley, Mgr.	Bancroft Florist, Lansing
Robert Bentley, Mgr.	VanPeenans Flowers, Lansing
Michael Holmes, Owner	Holmes Floral, Lansing
Larry Smith, Owner	Smith's Floral, Lansing
Lloyd Thompson, Owner	Arcade Florist, Flint

A P P E N D I X G

MICHIGAN STATE UNIVERSITY EAST LANSING • MICHIGAN 48823

COLLEGE OF AGRICULTURE AND NATURAL RESOURCES

INSTITUTE OF AGRICULTURAL TECHNOLOGY • AGRICULTURE HALL

As a former student of the Commercial Floriculture Technical Program at Michigan State University we are sure you will be interested in what is happening. We are conducting a survey to discover the strengths and weaknesses in the program and to learn what has happened to you since leaving M.S.U.

Since you now have both formal training and a number of years experience in the flower business, your opinions are valuable and are greatly needed.

With your help we can improve the program--with your help we'll be graduating better trained people.

Would you please take a few moments now and fill out this easy-to-answer questionnaire? Then return it in the stamped, self-addressed envelope provided.

Thank You So Very Much,

Dr. H. Ecker
Director of the Institute of
Agricultural Technology

A P P E N D I X H

Section I a

Skills and Competencies For Former Students Who Are Now Employed in the Floral Industry to Fill Out

Name of person completing this form: _____

Title or Position in Firm: _____

Major Job Responsibilities are: _____

Name of Firm: _____

The purpose of this section is to determine the skills or competencies you feel are necessary to the execution of your job (if you are working in the floral industry), and where you learned the most about these skills.

DIRECTIONS FOR THE NEXT PAGE: For each skill listed, answer each of the following two questions:

1. How important is this skill in your present job? Please rank (1, 2, 3 or 4) your response in the box. (Only ONE number per box).

Column: 1. Not required to satisfactorily perform this job
2. Slightly important
3. Considerable importance
4. Critically important

2. Where did you learn the most about this skill? Please rank (1, 2, 3 or 4) your response by marking a number in the box.

Column: 1. No training: No formal instruction in skill.
2. Outside M.S.U.: This includes either experience or training before coming to or since leaving M.S.U.
3. Ag. Tech Courses: You learned most about the skill while in the program.
4. Placement Training: You learned most about the skill while on placement training.

Section I - (cont.)
For Former Students

Competencies and Skills Related To:
FLOWER SHOP MANAGEMENT

Section I * (cont.) For Former Students		IMPORTANCE OF THIS SKILL FOR YOUR PRESENT JOB	WHERE DID YOU LEARN MOST ABOUT THIS SKILL?
		NOT AT ALL IMPORTANT	MODERATELY IMPORTANT
		NOT AT ALL IMPORTANT	MODERATELY IMPORTANT
23.	Ability to purchase perishable merchandise.		
24.	Ability to purchase non-perishable merchandise.		
25.	Ability to sell perishable merchandise.		
26.	Ability to sell non-perishable merchandise.		
27.	Ability to plan advertising and promotions.		
28.	Ability to plan and execute in-store and window displays.		
29.	Ability to greet, direct and deal with the public.		
30.	Understanding the importance of public relations.		
31.	Ability to plan and think ahead.		
32.	Ability to be innovative (idea person).		
33.	Understanding the use of financial records.		
34.	Understanding the importance of time and motion economy.		
35.	Understanding inventory control and turnover.		
36.	Understanding and practicing cost reduction.		
37.	Understanding the duties of clerical.		
38.	Understanding the ware services.		
39.	Understanding creative merchandising.		
40.	Ability to answer the phone.		
41.	Ability to answer the phone in a fast, friendly manner.		
42.	Ability to answer the phone in a courteous manner.		
43.	Ability to answer the phone in a professional manner.		
44.	Ability to answer the phone in a friendly manner.		
45.	Ability to answer the phone in a helpful manner.		
46.	Ability to answer the phone in a polite manner.		
47.	Ability to answer the phone in a courteous manner.		
48.	Ability to answer the phone in a professional manner.		
49.	Ability to answer the phone in a friendly manner.		
50.	Ability to answer the phone in a helpful manner.		
51.	Ability to answer the phone in a polite manner.		

Section I a (con't.)

This question to be answered by program GRADUATES ONLY.

After graduating from the program and beginning work in the floral industry, what specific training or skills did you feel you lacked?

Please list:

1. _____
2. _____
3. _____
4. _____
5. _____

Section I b

Evaluation of Educational Activities

For Former Students to Fill Out

Rate the following activities. How useful were they to your education?
Check the one most appropriate square to the right of each activity.

Educational Activity	I Didn't Participate	Of Little Benefit	Very Beneficial	Extremely Beneficial
Fall Mum Sales				
Annual Spring Field Trip				
Class Field Trip				
Bridal Show				
Floriculture Forum				
Ag. Tech Organizations				
Industry Groups (Like M.S.F.A.)				
Industry Conventions				

If you would like, comment on how any of the above activities were or were not beneficial to your education.

Comments: _____

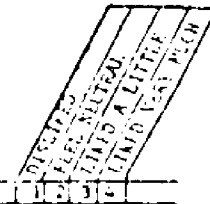
Section I c (1)

Program Improvement
Filled Out By All Former Students

This section is designed to give detailed information as to how you felt about many elements of the Commercial Horticulture Technical Program.

Please rank each of the statements below with either a 1, 2, 3 or 4.
Ranking Scale:

1. Disliked
2. Not Neutral
3. Liked a little
4. Liked very much



Category	1	2	3	4
1. The practicality of the Commercial Horticulture Program.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. The courses that were required.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. The wide range of subject matter covered in the courses.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. The optional four year courses available to those interested.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. The general quality of the instruction.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Floral Design Classes.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. The Greenhouse or Propagation classes.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. The idea of having practical class projects (not daily homework).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. The idea of having some outside speakers in the classrooms.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Having classes daily with the same group of horticulture students.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. The administrative guidance in course selection.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. The close relationship that exists between student and faculty.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. The availability of facilities and equipment for use.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. The idea of having projects outside the classroom.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. The guidance and supervision in the practical experience program.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. The quality of the practical experience program.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. Other suggestions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
-----	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
-----	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
-----	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

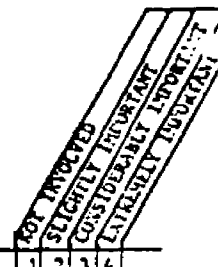
Section I c (2)

Program Improvement (con't.)
Filled Out By All Former Students

This section is designed to give detailed information as to how important each one of the statements below were to your understanding of the Floral Industry and/or your relation to it.

Please rank each of the statements below with either a 1, 2, 3 or 4.
Ranking Scale:

1. Not involved.
2. Slightly important
3. Considerably important
4. Extremely important



Statements

- | | |
|---|--------------------------|
| 1. Gaining a better understanding of yourself, your abilities and your goals. | <input type="checkbox"/> |
| 2. Learning more about industry opportunities and requirements. | <input type="checkbox"/> |
| 3. Receiving the kind of training which enable you to get a job in the field of your choice. | <input type="checkbox"/> |
| 4. Receiving the encouragement, challenge, and sense of success necessary for you to continue your education after leaving the program. | <input type="checkbox"/> |
| 5. Discovering new fields of interest due to classroom subject areas. | <input type="checkbox"/> |
| 6. Becoming acquainted with industry people and developed a friendship or appreciation for them. | <input type="checkbox"/> |
| 7. Developing an appreciation of the industry through its periodicals. | <input type="checkbox"/> |
| 8. Developing a kinship, or feeling, for the industry which has led to greater understanding. | <input type="checkbox"/> |
| 9. Your informal discussions with fellow students. | <input type="checkbox"/> |
| 10. Your informal discussions with the instructors. | <input type="checkbox"/> |
| 11. Your part-time work experiences (not Placement Training). | <input type="checkbox"/> |
| 12. Your contacts with the program administrators. | <input type="checkbox"/> |
| 13. Your extra-curricular activities. | <input type="checkbox"/> |
| 14. Others (List) _____ | <input type="checkbox"/> |
| _____ | <input type="checkbox"/> |
| _____ | <input type="checkbox"/> |
| _____ | <input type="checkbox"/> |

Section II a

JOB HISTORY

For All Former Students

Please indicate your employment history since leaving the Floriculture Technical Program (Short Course). Begin with your PRESENT job and work backwards. List only those jobs in which you spent more than 20 hours per week and were employed for more than two months.

JOB TITLE	Present Job	Second Job
Dates of Employment	From Mo. _____ Yr. _____ to Mo. _____ Yr. _____	Mo. _____ Yr. _____ Mo. _____ Yr. _____
MONTHLY SALARY:		
Starting Salary	\$ _____	\$ _____
Current or Ending Salary	\$ _____	\$ _____
Reasons for Leaving Each Job		<p>Please Rank Your Reasons for leaving this job by placing the appropriate number from the left margin in the boxes below.</p> <p>Most important</p> <p><input type="checkbox"/></p> <p>Less important</p> <p><input type="checkbox"/></p> <p>Least important</p> <p><input type="checkbox"/></p>
1. Didn't like employer.		
2. Didn't like other employees.		
3. Low wages.		
4. Didn't like the work.		
5. Advanced to better job.		
6. Working conditions.		
7. Required more training than I had.		
8. Military.		
9. School.		
10. Others (List) _____		
11. _____		
12. _____		
13. _____		

Section II a (con't.)

JOB HISTORY
For All Former Students

JOB TITLE	Third Job	Fourth Job
Dates of Employment	From Mo. _____ Yr. _____ to Mo. _____ Yr. _____	Mo. _____ Yr. _____ Mo. _____ Yr. _____
MONTHLY SALARY:		
Starting Salary	\$ _____	\$ _____
Current or Ending Salary	\$ _____	\$ _____
Reasons for Leaving Each Job.	<p>Please Rank Your Reasons for leaving this job by placing the appropriate number from the left margin in the boxes below.</p> <p>Most important</p> <p><input type="checkbox"/></p> <p>Less important</p> <p><input type="checkbox"/></p> <p>Least important</p> <p><input type="checkbox"/></p>	<p>Please Rank Your Reasons for leaving this job by placing the appropriate number from the left margin in the boxes below.</p> <p>Most important</p> <p><input type="checkbox"/></p> <p>Less important</p> <p><input type="checkbox"/></p> <p>Least important</p> <p><input type="checkbox"/></p>
1. Didn't like employer.		
2. Didn't like other employees.		
3. Low wages.		
4. Didn't like the work.		
5. Advanced to better job.		
6. Working conditions.		
7. Required more training than I had.		
8. Military.		
9. School.		
10. Others (List) _____		
11. _____		
12. _____		
13. _____		

Section II a (con't.)

JOB HISTORY
For All Former Students

JOB TITLE	Fifth Job	Sixth Job
Dates of Employment	From Mo. _____ Yr. _____ to Mo. _____ Yr. _____	Mo. _____ Yr. _____ Mo. _____ Yr. _____
MONTHLY SALARY:		
Starting Salary	\$ _____	\$ _____
Current or Ending Salary	\$ _____	\$ _____
Reasons for Leaving Each Job.	<p>Please Rank Your Reasons for leaving this job by placing the appropriate number from the left margin in the boxes below</p> <p>Most important</p> <p><input type="checkbox"/></p> <p>Less important</p> <p><input type="checkbox"/></p> <p>Least important</p> <p><input type="checkbox"/></p>	<p>Please Rank Your Reasons for leaving this job by placing the appropriate number from the left margin in the boxes below.</p> <p>Most important</p> <p><input type="checkbox"/></p> <p>Less important</p> <p><input type="checkbox"/></p> <p>Least important</p> <p><input type="checkbox"/></p>
1. Didn't like employer.		
2. Didn't like other employees.		
3. Low wages.		
4. Didn't like the work.		
5. Advanced to better job.		
6. Working conditions.		
7. Required more training than I had.		
8. Military.		
9. School.		
10. Others (List) _____		
11. _____		
12. _____		
13. _____		

APPENDIX I

MICHIGAN STATE UNIVERSITY EAST LANSING • MICHIGAN 48823

COLLEGE OF AGRICULTURE AND NATURAL RESOURCES

INSTITUTE OF AGRICULTURAL TECHNOLOGY • AGRICULTURE HALL

As a former student of the Commercial Floriculture Technical Program at Michigan State University we are sure you will be interested in what is happening. We are conducting a survey to discover the strengths and weaknesses in the program and to learn what has happened to you since leaving M.S.U.

Even though you may not now be employed in the flower industry we are most interested in your line of work.

With your help we can improve the program with your help we'll be graduating better trained people.

Would you please take a few moments now and fill out this easy-to-answer questionnaire? Then return it in the stamped, self-addressed envelope provided.

Thank you very much.

Sincerely,

John

Smith

A P P E N D I X J

MICHIGAN STATE UNIVERSITY EAST LANSING • MICHIGAN 48823

COLLEGE OF AGRICULTURE AND NATURAL RESOURCES

INSTITUTE OF AGRICULTURAL TECHNOLOGY • AGRICULTURE HALL

We would like to be able to supply you with better trained employees! To do this we need to improve the quality of our Commercial Floriculture Technical Program at Michigan State University.

Because you employ a former student of this program we value your unbiased opinions and thoughts.

Enclosed is an Employers Questionnaire. We would be grateful if you would spend a few thoughtful moments responding to it. The questions are easy to answer.

When it is completed, please return it in the stamped self-addressed envelope provided.

Best Wishes to You,

Dr. H. Ecker
Director of the Institute of
Agricultural Technology

APPENDIX K

Section I d

Employer Background Information Sheet To Be Filled Out By All Employers Who Presently Employ A Former Student

Name of person completing this form: _____

Title or position in firm: _____

Name of firm: _____

Address of firm: _____
STREET CITY STATE ZIP

1. My shop is located in: (check all that apply).

- ☐ a. Rural area
- ☐ b. Village or small town
- ☐ c. Residential area
- ☐ d. Neighborhood shopping area
- ☐ e. Large shopping center or mall
- ☐ f. Metropolitan (large city) area
- ☐ g. Other, specify _____

2. I have the following number of employees:

☐ (Two one-half time employees equal one full-time employee.)

3. Our store(s) annual volume is: (check the appropriate box)

- ☐ a. \$0 - \$50,000
- ☐ b. \$50,000 - \$100,000
- ☐ c. \$100,000 - \$250,000
- ☐ d. over \$250,000

4. I usually find and hire new employees from: check the appropriate box(s).

- ☐ a. Off the street and train them myself.
- ☐ b. A University "technical" program.
- ☐ c. A University 4-year horticulture program.
- ☐ d. A vocational school.
- ☐ e. Design Schools
- ☐ f. Other sources (explain) _____

5. In the past 5 years, how many Ag. Tech students have you: (Place a number in each box)

- ☐ a. Hired for Placement Training?
- ☐ b. Hired after they left the Ag. Tech program?

Section I d (con't.)

Information Relating Directly to the Former Student

6. What position is presently held by the former student?

Title of position: _____

7. How satisfied are you with the work of the former student? Check one.

- ☐ a. Very satisfied
- ☐ b. Satisfied
- ☐ c. Dissatisfied
- ☐ d. Very dissatisfied

How does the employee compare with other employees in your firm on quality and quantity of work produced. Place a check (✓) along the rating line to indicate the rating of the former student.

8. How does he compare to a person with no formal training and no experience in the industry? (If there is no one with which to compare, check here. ☐)

[illegible]

9. How does he compare to a person with no formal training and the same number of years of experience in the industry? (If there is no one with which to compare, check here ☐).

	<u>Superior</u>	<u>Inferior</u>
Quality of work	' ' ' ' ' ' ' ' ' ' ' '	' ' ' ' ' ' ' ' ' ' ' '
Quantity of work	' ' ' ' ' ' ' ' ' ' ' '	' ' ' ' ' ' ' ' ' ' ' '

10. How does he compare to a person with no formal training and two years more experience in the industry? (If there is no one with which to compare, check here. ☐)

	<u>Superior</u>	<u>Inferior</u>
Quality of work	' ' ' ' ' ' ' ' ' ' ' '	' ' ' ' ' ' ' ' ' ' ' '
Quantity of work	' ' ' ' ' ' ' ' ' ' ' '	' ' ' ' ' ' ' ' ' ' ' '

11. How does he compare to a person with no formal training and four years more experience in the industry? (If there is no one with which to compare, check here. ☐)

[illegible]

Rating of Skills of the Former Student....(Your Present Employee)

This section is designed to determine the importance of various skills needed in the performance of the employees job...and...to determine the ability of the former student to perform those skills.

DIRECTIONS FOR THE NEXT PAGE:

1. How important is this skill to the employees present job?

Please rank (1, 2, 3 or 4) your response in the box. (Only ONE number per box.)

Column:

- 1: Not required to satisfactorily perform his job
2: Slightly important
3: Considerably important
4: Critically important

2. How would you evaluate his ability to perform the skill?

Indicate his ability to perform the skill by placing a ranking number (1, 2, 3 or 4) in the box.

Column:

- 1: Little or no ability to perform the skill
2: Needs improvement to properly do the job
3: Skills are generally satisfactory for present job
4: Outstanding ability to perform skill

Section 1 d (con't.)

FOR EMPLOYERS TO FILL OUT

Competencies and Skills Related To:

FLORAL DESIGN

Section I d (con't.) FOR EMPLOYERS TO FILL OUT Competencies and Skills Related To: FLORAL DESIGN	IMPORTANCE OF THIS SKILL FOR HIS PRESENT JOB				EVALUATE YOUR FORMER STUDENT'S PERFORMANCE
	1 NOT ESSENTIAL	2 SLIGHTLY IMPORTANT	3 CONSIDERABLY IMPORTANT	4 CRITICALLY IMPORTANT	
					1 LITTLE OR NO ABILITY
					2 POOR PERFORMANCE
					3 SATISFACTORY
					4 OUTSTANDING ABILITY
1. Ability to design corsages.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Ability to design home and hospital arrangements.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Ability to design funeral arrangements.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Ability to design wedding work.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Ability to design novelty arrangements.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Ability to design at a good speed.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Ability to design with "a flair" (design creatively.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Ability to design with permanent and dried materials.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Ability to interpret the customers wishes design-wise.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Ability to recognize the importance of selling what you're "heavy on."	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Ability to recognize and use good color combinations.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Ability to price fresh arrangements profitably.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Ability to price permanent and dried arrangements profitably.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Ability to practice and appreciate the business aspects of design, that is design profitably.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. Ability to plan and estimate the labor and material costs of large parties.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

A P P E N D I X L

MICHIGAN STATE UNIVERSITY EAST LANSING • MICHIGAN 48823

COLLEGE OF AGRICULTURE AND NATURAL RESOURCES

INSTITUTE OF AGRICULTURAL TECHNOLOGY • AGRICULTURE HALL

Everyone has it - but no one wants it!

"Busyitis" plagues everyone! We're all too busy, and there isn't enough time to do everything we want to do.

You may already have done it. If so, don't do it again. If you haven't taken the time to fill out the questionnaire that was sent to you the last of April, we would appreciate it if you would do so at your earliest convenience.

The questionnaire is a very practical tool used to critique and improve the Commercial Floriculture program.

Your thoughts, opinions and ideas are needed. You can help!

Sincerely,

Dr. H. Ecker
Director of the Institute of
Agricultural Technology

HE/jt

A P P E N D I X M

MICHIGAN STATE UNIVERSITY EAST LANSING • MICHIGAN 48823

COLLEGE OF AGRICULTURE AND NATURAL RESOURCES

INSTITUTE OF AGRICULTURAL TECHNOLOGY • AGRICULTURE HALL

Hope you have had some time to relax since the holidays, and all is going well with you.

The last of April, we sent you a very important questionnaire. It's purpose was to get feedback from you about the Commercial Floriculture program at M.S.U. With your thoughts, ideas, reactions and comments, we feel the program can be significantly improved and strengthened. Here is your opportunity to have an important input into the education of future florists.

So if your first questionnaire was lost in the holiday shuffle, please take a few minutes now to fill this one out and return it in the stamped, self-addressed envelope provided.

Best of luck to you.

Sincerely,

Dr. H. Ecker
Director of the Institute
of Agricultural Technology

HE/jt

P.S. If you have already filled out and returned the questionnaire, please ignore this letter.

APPENDIX N

MICHIGAN STATE UNIVERSITY EAST LANSING • MICHIGAN 48823

COLLEGE OF AGRICULTURE AND NATURAL RESOURCES

INSTITUTE OF AGRICULTURAL TECHNOLOGY • AGRICULTURE HALL

The last week of April, we sent you a questionnaire. Since it hit you at a rather poor (holiday) time and could easily have been lost in the shuffle, we are enclosing another one.

The whole purpose of this study is to get feedback from employers like yourself, who have a former M.S.U. Commercial Floriculture student working in your organization.

We have also sent a questionnaire to former students to learn their views on our program and now would like yours - to get a different perspective. Your responses to the easily answered questions will be used as a basis for program evaluation and improvement.

Your comments will be most welcome and will be a great contribution toward industry employee improvement, something we are all interested in.

We would appreciate it very much if you could take a few minutes, fill out the questionnaire and return it in the enclosed stamped, self-addressed envelope.

Thank you.

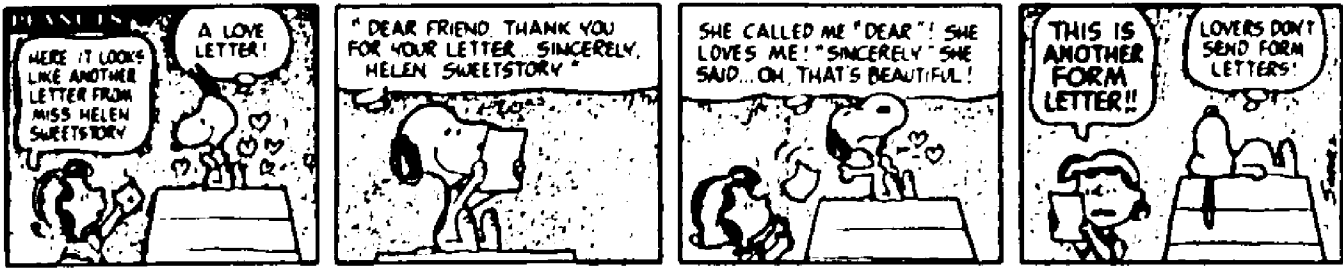
Sincerely,

Dr. H. Ecker
Director of the Institute
of Agricultural Technology

HE/jt

P.S. If you have already filled out and returned the questionnaire, please ignore this letter.

APPENDIX O



June 15, 1973

Dear _____

Another reminder that we value your opinion
and are anxiously awaiting the arrival of your
questionnaire.

If you have already returned yours to
Dr. Ecker, then ignore this note.

Have a pleasant summer.

Sincerely,

A P P E N D I X O

MICHIGAN STATE UNIVERSITY EAST LANSING • MICHIGAN 48823

COLLEGE OF AGRICULTURE AND NATURAL RESOURCES

INSTITUTE OF AGRICULTURAL TECHNOLOGY • AGRICULTURE HALL

Dr. Ecker asked me to drop you a line, so I am.

PLEASE

RETURN

THE

QUESTIONNAIRE!

YOUR

ANSWERS

ARE

NEEDED

NOW!

Please.....!

Donald Dunbar

A P P E N D I X P

MICHIGAN STATE UNIVERSITY EAST LANSING • MICHIGAN 48824

COLLEGE OF AGRICULTURE AND NATURAL RESOURCES

INSTITUTE OF AGRICULTURAL TECHNOLOGY • AGRICULTURE HALL

June 26, 1973

WHO SAID YOUR OPINION ISN'T WORTH TWO CENTS?

Just to prove to you that the old wives tale is wrong, we're sending you...

three pennies

WE DO VALUE YOUR OPINION!

P.S. If you have already sent in
your questionnaire, toss this
no-non-cents letter. If you haven't
you still have time...it is needed.

Cordially,

for

Dr. Harold Ecker,
Director of the Institute of
Agricultural Technology

APPENDIX Q

MICHIGAN STATE UNIVERSITY EAST LANSING • MICHIGAN 48823

COLLEGE OF AGRICULTURE AND NATURAL RESOURCES
INSTITUTE OF AGRICULTURAL TECHNOLOGY • AGRICULTURE HALL

June 28, 1973

Thank you so very much for filling out the questionnaire and returning it to us. It will be a big help in strengthening the Commercial Floriculture program at M.S.U.

There is a big temptation when receiving a questionnaire - to use the "round file" especially when you are in a holiday situation. We're glad you didn't!

Again, thanks for your assistance and cooperation in this effort.

Sincerely,



Dr. H Ecker
Director of the Institute
of Agricultural Technology

HE/jt

A P P E N D I X R

Former Students Who Participated in the Follow-up Study

Students are listed by the year they left the program, either by graduation or due to withdrawal. The addresses are correct as of June 1, 1973.

1965

Glen E. Collison
Box 66
Conklin, Michigan

James Lee Dionne
1111 Hewitt St.
Neenah, Wisconsin

Hurd Dean
1001 E. University, Apt. 3-B
Ann Arbor, Michigan 48104

John Mattern
150 Circle Dr.
Tiburon, Calif. 94920

Michael Mattern
1327 42nd Ave.
San Francisco, Calif. 94122

1966

Linda Bloye (Brown)
519 Ann St.
East Lansing, Michigan 48823

Ronald Brahmer
34240 Fountain Blvd.
Westland, Michigan 48185

Judith B. Cornell (Gross)
830 Spring
Ann Arbor, Michigan 48103

Janice Cutler (VanNortwick)
Route #1
Pentwater, Michigan

1966

Theodore E. Dorl
4014 Montgomery Road
Cincinnati, Ohio 45212

David S. Games
245 E. Second St.
Circard, Ohio 44420

Julia Ganser (Aulback)
Route #3
Hartford City, Indiana 47348

Phyllis Genter (Vilcans)
4690 N.W. Strong Creek
Comstock Park
Grand Rapids, Michigan 49321

Mary Haubenstricker (Dudley)
1048 Church Road, N. Adams
Osseo, Michigan

Randal Jones
837 Willana
Milan, Michigan

Glenda Lamoreaux (Wright)
10721 W. Poke Road
Sumner, Michigan 48889

Ken G. Pipes
2239 Alva Circle
Salt Lake City, Utah

Dave Rayment
1717 S. 12 Ave.
Lake Worth, Florida 33460

1966

Douglas Richardson
16535 Bentler
Detroit, Michigan 48219

Charles Roeschlaub
225 Dorothy St.
Syracuse, New York 13200

Wallace C. Schling
Charles River School
Dover, Mass. 02030

Arthur D. Sellevold
14220 Haymeadow Dr. Apt. 2061
Dallas, Texas 75240

Charlotte Temple (Huffman)
1310 Wells
Niles, Michigan

Jean Williamson (Wasserman)
874 North Brookside
Muskegon, Michigan

1967

Francis S. Anthony (Ridge)
610 W. Sixth St.
Flint, Michigan

Leonard H. Beasley
Hg. Co. SBSO
AP. New York 09178

Susan K. Carstens
715 S.E. 12 Ct.
Ft. Lauderdale, Florida 33316

Lee E. Deephouse
Disb. On Site Exam Team
Montford Point MCB
Camp Lejeune, N. C. 28542

Lonnie L. Dudley
415 West Rail Road
Dowagiac, Michigan

1967

Thomas E. Harbulak
121 Park Ave.
Daytona Beach, Florida 32018

Larry James Kessler
3040 Jackson
Saginaw, Michigan 48601

Larry L. Lamberson
932 S.W. 15th Terrace #2
Ft. Lauderdale, Florida

Janis K. Morden (Vallie)
Royalwood Ave.
Houghton, Michigan 49931

Daniel R. Perkins
35400 Euclid Ave., Apt. A206
Willoughby, Ohio

Erich A. Pudwell
Route 1
Grand Park, Illinois 60940

Cecilia A. Scime (Lauigne)
Four Seasons Trailer Ct., R #2
Plattsburgh, New York 12901

Joseph E. Smith
1508 Clairmont Place
Nashville, Tenn. 37215

William R. Smith
3557 Hartland Road
Gasport, New York 14067

John G. Vandersalm
10975 Tanglewood Hills
Richland, Michigan

Garren D. Wellman
275 Prospect St., Apt. 2B
E. Orange, New Jersey 07017

1968

Sharon F. Arendt (Lanier)
437 S. Seventh
Brighton, Michigan 48116

Dan L. Arent
1887 Ogden Ave.
Benton Harbor, Michigan 49022

Roberta J. Bettesworth
3114 Flushing Road
Flint, Michigan 48504

Robert A. Fraser
79 Hillcrest Dr.
Moncton, New Brunswick, Canada

Kathy J. Hansen
342 Eureka S. E.
Grand Rapids, Michigan 49506

Jean M. Heddins
1587 S. Congress, Apt. 38
Ypsilanti, Michigan 48187

Terry Long
3929 Willy's Parkway
Toledo, Ohio 43612

Gayanne M. Mansfield (Wood)
4535 Bethune
Orchard Lake, Michigan

Thomas E. Matula
5965 W. Michigan Apt. A-3
Saginaw, Michigan 48603

Kathleen C. McMullen (Lasley)
748 Edgewood
Jackson, Michigan 49202

Richard E. Schultz
10293 Cedarcrest Dr., R #1
Whitmore Lake, Michigan

Norene Kay Sellers (Trott)
Route #1
Reading, Michigan

1968

Rosemarie Sestito (Oberlander)
29 Paedegat 15th St.
Brooklyn, New York

Tomas O. Sigur
26035 Mound Road
Warren, Michigan

Norman H. Silk
5743 North River Road
Marine City, Michigan 48039

James R. Smart
1145 Bothwell Dr.
Swift Current, Saskatchewan, Canada

Dianne Stoner (Winslow)
7852 E. Circle
Jackson, Michigan

1969

Marilyn Burnham (Johnson)
38 Rockland Road
Trenton, New Jersey 08638

Susan Chappell (Castora)
16529 Salem
Detroit, Michigan 48219

Barbara F. Drake
1506 Eifert Road
Holt, Michigan 48842

Anton W. Gaertner
1965 Brockway
Saginaw, Michigan 48601

Kathleen A. Galbreath (Yankee)
6399 Iroquois, R #1, Box 665W
Oscoda, Michigan 48750

Kristine R. Hammond (Hall)
Lot #25, 385 W. Brown
Beaverton, Michigan 48612

Merle Klotz
906 Napoleon Road
Bowling Green, Ohio

1969

Louis Lappa
19801 MacArthur
Detroit, Michigan

Becky L. McNeill (Fleury)
Winnans Road
Alma, Michigan

Russell Nelson
60 N. Racoon Road, Apt. 48
Youngstown, Ohio 44515

Shiela Tillotson (Blough)
715 Buchanan Ave., Apt. #1
Kalamazoo, Michigan 49008

Alice M. Stafford (Martin)
1315 Mulberry, Apt. 28
San Antonio, Texas

Mary A. Striggow (Root)
6315 Jackman Road
W. Toledo, Ohio

Kathy L. Thrun (McLeod)
226 1/2 Prairie St.
Charlotte, Michigan 48813

Dennis Wasserman
874 N. Brookside Dr.
Muskegon, Michigan 49441

James A. Watt
6270 Beechfield Dr.
Lansing, Michigan

Mary Ann Wescott
1682 San Onofre Dr.
Pacific Palisades, Calif. 90272

1970

Janet Boehnlein (Fox)
330 Merrich St.
Adrian, Michigan 49221

Dawn Breininger
4255 Scott St.
Ft. Meyers, Florida 33901

1970

Daniel J. Hagan
2540 North 65th
Wauwatosa, Wisconsin 53200

Kimberly Howes (Schippers)
1349 Crooked Lake Dr.
Kalamazoo, Michigan 49009

William E. LaChine, Jr.
109 Wilber St.
Wallbridge, Ohio 43465

Keith Lamphere
552 West Maple
Mason, Michigan 48854

Catherine L. Mazny (Knot)
1803 1/2 W. Michigan Ave.
Saginaw, Michigan 48602

Mark McCuthan
4830 Penfair
Columbus, Ohio

Robert J. Meiste
268 E. 24 St.
Holland, Michigan 49423

Linda Ott (Curry)
2831 Mill St.
Ida, Michigan

Richard Thibodeau
9297 Balfour
Detroit, Michigan 48224

Mary L. Weishaupt
28 N. Smith
New Buffalo, Michigan 49117

Thomas O. Williams
846 Bryan
Bryan, Ohio 43506

Mona Ye (Mylnarczyk)
4247 Seventh St.
Ecorse, Michigan 48229

A P P E N D I X S

Employers Who Participated in the Follow-up Study

Mr. Bob Aldrich
Aldrich Floral Studio
440 S. Jefferson
Mason, Michigan 48854

Robert Anthony
c/o Gordon Anthony Florist
402 W. Court St.
Flint, Michigan 48503

Mr. Walter Churchill
c/o Churchill's Flowers & Gifts
5700 Monroe St.
Sylvania, Ohio

Mr. Ted Dorl, Sr.
Dorland Farm Florist
4627 Montgomery Road
Cincinnati, Ohio 45212

Bill Durant
Durant's Flowers
115 W. Michigan
Ypsilanti, Michigan 48197

Mr. Fred Flipse
Exotic Gardens
5701 S.W. 70th Ave.
Davie, Florida 33305

Mr. F. Frasu
Ray Frasu Limited
Highland Square
Moncton, New Brunswick, Canada

Mr. C. P. Frueh's
Frueh's House of Flowers
126 N. Washington Ave.
Saginaw, Michigan 48607

Mr. Harold Gaertner
Gaertner's Greenhouse & Flower Shop
1958 Brockway St.
Saginaw, Michigan 48602

Mr. Joe Gaertner
Roethke Flowers, Inc.
404 N. Michigan Avenue
Saginaw, Michigan 48602

Mr. Ben Gregory
Gregory Florist
925 E. Ludington Ave.
Ludington, Michigan 49431

Mr. Herb Horsley
Horsley's Flowers & Gifts
715 S. Saginaw St.
Midland, Michigan 48640

Mr. Hossler
Canton Flower Shop
Canton, Ohio 44702

Mr. Walter Johnson
Momeuce Greenhouse
57 Hill St.
Mokence, Illinois 60954

Mr. Kenreigh
Endres Gross Flowers & Gifts
30 S. Broad St.
Canfield, Ohio 44406

Mr. Klotz, Sr.
Klotz Flower Farm
Box 350, Napoleon Road
Bowling Green, Ohio 43402

Mr. W. Lamoreaux
Edmore Greenhouse & Flower Shop
527 First St.
Edmore, Michigan 48827

Mr. Ed Lobb
Ed Lobb's Flowers
1382 Fort St.
Lincoln Park, Michigan

Mr. Parmenter
Parmenter's Florist, Inc.
178 East Brown St.
Birmingham, Michigan 48011

Mr. Jack Reamer
Blossom Shop
187 S. Howell St.
Hillsdale, Michigan 49242

Sandport Greenhouse Inc.
4322 DeForest Ave.
Ft. Wayne, Indiana 46809

Mr. Rovert Sauve
Wanner's Flower Shop
2356 S. Michigan Ave.
Saginaw, Michigan 48602

Mike Siedl
Kesals Florist, Inc.
109 W. Grand River
East Lansing, Michigan 48823

Mr. Ivan Sigur
Sigur's Greenhouse
26005 Mound Road
Warren, Michigan

Mr. Vern Smith
Smith's Flower Shop
164 First Ave., N.E.
Swift Current, Saskatchewan, Canada

Mr. Smith, Sr.
Smith Roses, Inc.
3556 Hartland Road
Gasport, New York 14067

Manager, Stillman Bros.
Flower City
2972 S. 108th
W. Allis, Wisconsin

Mr. Thode
Thode's Florist
1609 Lincoln Way
LaPorte, Indiana 46350

Mr. Valdher
Holland Orchards
29 West St.
Holland, Michigan

Mr. Gar VanBoochove
VanBochove Flowerland
1019 Miller Road
Kalamazoo, Michigan 49005

Mr. Joe Wunderlin
North Side Greenhouse
1012 N. Jefferson St.
Hartford City, Indiana 47348