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A Study to Determine if At Risk Adults are Adequately Trained to Perform Well and Secure a Job After Utilizing the Norfolk Skills Center Horticulture Program

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A STUDY TO DETERMINE IF AT RISK ADULTS ARE ADEQUATELY
TRAINED TO PERFORM WELL AND SECURE A JOB AFTER
UTILIZING THE NORFOLK SKILLS CENTER
HORTICULTURE PROGRAM

A Research Paper
Presented to
The Faculty of the College of Education
Old Dominion University

In Partial Fulfillment
of the Requirements for the Degree
Master of Science in Education

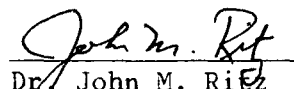
by
Ronald A. Grainger

May 1993

APPROVAL PAGE

This research paper was prepared by Ronald A. Grainger under the direction of Dr. John M. Ritz in OTED 636, Problems in Education. It was submitted to the Graduate Program Director as partial fulfillment of the requirements for the Degree of Master of Science of Education.

APPROVAL BY:


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Date

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CHAPTER I

INTRODUCTION

Norfolk Public Schools offers vocational education programs to both high school students and adults. The offerings are at two different locations, Norfolk Technical Vocational Center (N.T.V.C.) and Norfolk Skills Center. Those high school students that are not college bound are offered curriculums in fashion, automotive, building, trade horticulture, to name a few. These careers can be pursued at N.T.V.C.. Adults from Norfolk and surrounding areas can receive technical training and plan a career path at Norfolk Skills Center. The curriculum at the skill center covers auto body repair, auto mechanic, building maintenance, welding, brick laying, office technology and horticulture.

The mission of Norfolk Skills Center (N.S.C.) is to get adults employed in the job market. N.S.C. operates under the guidelines of Public Law 97-300 (Job Training Partnership Act). One aim of J.T.P.A. was to establish programs to prepare at-risk and unskilled adults for entry level employment. The adult horticulture program is unique in Virginia. The Norfolk Skills Center is the only one of five training centers to offer horticulture.

With the rapid growth of Tidewater, Virginia, many new jobs were created in horticulture for entry level employees. This on going demand for employees has kept horticulture as part of the curriculum at N.S.C. for twenty-five years. Many adults have no idea what field of horticulture they would like to work in or what training they need. Few adults

know what kind of job they want and their training could be as short as five months or as long as ten months.

STATEMENT OF THE PROBLEM

The problem of this study was to determine if at-risk-adults can secure a job and perform well in the horticulture field after training through Norfolk Skills Center Horticulture Program.

RESEARCH GOALS

The purpose of this study was to answer the following questions:

1. Did the adult get hired in horticulture?
2. Was the job an entry level position or did the adult enter at a higher level?
3. How well did the N.S.C. horticulture program equip the adult for their job?
4. What modifications should be made within the curriculum, new equipment, and/or other recommendations?

BACKGROUND AND SIGNIFICANCE

Vocational Education has been available for many years. There have been several modifications in the target groups. entrance requirements. curriculum directions. funding, high school and adult programs. The Smith Hughes Act of 1917 extended federal funds to secondary schools for the support of training in agriculture, home economics, trade and industry as well as the preparation of instructors in these fields

(Mitzel, 1982). From 1917 to 1963, congress passed many acts that increased their support and broadened the scope of vocational education. The manpower Developmental and Training Act of 1962, the Vocational Education Act of 1963, and its subsequent amendments, shifted the emphasis from occupational categories to target groups of people to be served.

Out of all of this, the Norfolk Skills Center evolved twenty-eight years ago with a mission to train adults for specific jobs. The horticulture program was started twenty-five years ago, with changes resulting from a two year program to the current ten month program. Also some change in the curriculum content has occurred. N.S.C. horticulture job placement averages 87% placement. The N.S.C. has the highest placement rate of all centers in Virginia. The Horticulture Craft Advisory Committee wanted to know how successful were the graduates of the horticulture program in the industry and what was their opinion of the training.

Research data on these topics is scarce. The curriculum may have been adequate five years ago, but what about today? When the research data was collected, a better understanding of how successful the horticulture program was doing in training the students to meet the needs of the workforce was made apparent. The study serves as an excellent indicator for modification, as may be appropriate, in the horticulture program curriculum.

LIMITATIONS

The scope of the study was limited to adult students in the horticulture program of the Norfolk Skills Center. These adults were at-risk-adults from the cities of Norfolk, Virginia Beach, Chesapeake and Portsmouth. The research results were from adults who utilized the horticulture training program between 1987 to 1991.

ASSUMPTIONS

The following assumptions were applied to this study:

1. The adults would get a job in the horticulture industry.
2. There was a need in the horticulture business sector for broadly trained employees.
3. It is assumed that all adults received the same instruction and training even though there is a rolling entrance and varied exit dates of the program.

PROCEDURES

A survey form was designed and administered to horticulture program graduates from N.S.C. during the spring of 1991. A cover letter asking for their cooperation and an explanation of the survey form was sent to 42 previous students. The data was collected, tabulated, and analyzed. Based on the findings, recommendations for program modification were determined.

DEFINITION OF TERMS

To simplify and shorten the overall paper, the following list of terms have been defined for the reader.

1. At-Risk-Adults -- Those adults that are socially, economically and handicapped that are classified as disadvantaged.
2. Economically Disadvantaged -- Those adults who are making less than the income guidelines as administered by the Private Industry Council.
3. Competency -- The ability to demonstrate or perform a specific task to a minimum standard.
4. Competency Based Education (CBE) -- Education programs and courses that are based on role relevant competencies.
5. Content -- The knowledge, skills, processes and values that must be earned as part of a course or curriculum.
6. Curriculum -- All of the objectives, content, and learning sequence for a particular course.
7. Horticulture Craft Advisory Committee -- It is the local advisory committee for the horticulture program at N.S.C.
8. J.T.P.A. -- Job Training Partnership Act (1982) superseded the CETA and has involved the private industry sector in its management. Adult training and employment opportunities basically remain the same.
9. N.S.C. -- Norfolk Skills Center is an adult learning center responsible for training and job placement of at-risk-adults under J.T.P.A.

10. P.I.C. -- Private Industry Council is made up of educators and industry leaders who identify needs.
11. Southeastern Virginia Job Training Administration -- The local administration office for J.T.P.A. which manages the distribution of federal money.

OVERVIEW OF CHAPTERS

Chapter I introduced the study to determine if at-risk-adults were adequately trained to perform well and secure a job after receiving horticulture training. The Horticulture Craft Advisory Committee assessed there was a need for the study. With their direction, research goals were developed. The history of the N.S.C. and the significance of the study were discussed and given. The assumptions, limitations and definition of terms were also stated.

The following chapters II through IV, provide a review of the literature and an explanation of the methods and procedures employed. Chapter V presents a summary, conclusions and recommendations.

CHAPTER II

REVIEW OF LITERATURE

Before administering a questionnaire to the forty-two horticulture student graduates at Norfolk Skills Center, the researcher reviewed related literature on vocational education. Many successful vocational education programs had been studied and excellent comments on student, employee and employer satisfaction of vocational training curriculum were noted. In Chapter II, information was reviewed on: 1) the purpose of vocational education in the economy, 2) vocational education training success, 3) the contribution of vocational horticulture to society, and 4) the N.S.C. horticulture conceptual training model.

PURPOSE OF VOCATIONAL EDUCATION IN THE ECONOMY

One purpose of vocational education in our economy is to provide an alternate path of education for these students and adult learners who are not college bound. People's reason for enrolling in vocational education programs may vary as follows: 1) want a career, 2) want a car, 3) want money, 4) cannot collect assistance anymore, 5) want to get out of the house, 6) want to change career direction, 7) want to start their own business; the list continues. Most individuals enroll in vocational education to develop some type of job skill.

As society changes and becomes more complex, our technology and knowledge base has increased and placed more demands upon our work force. As demands are placed on the work force, vocational education

must meet these demands. The demands sprout new courses and change old curriculum to better serve the industry. As a result, vocational education plays an important role in changing education and the economical needs of nations and the citizens within the nations (Clayton 1976, p. 21). According to Dr. Willard Daggett, Director, New York Department of Education, "the work force has made drastic changes since 1950 in its demand for a skilled worker" (Daggett, 1991). In 1950 the work force was divided into 20 percent professional (managerial) jobs, 20 percent skilled (vocational-technical) jobs, and 60 percent unskilled jobs. By the year 2000 the work force will be divided into 85 percent skilled (vocational-technical), professional (managerial) jobs and 15 percent unskilled jobs. As stated by President Bush, "18 out of the 20 fastest growing occupations within the next decade will require skilled vocational-technical education" (Bush, 1990, p. 2).

Vocational education has for many decades assumed a key role in meeting the nation's demand for skilled workers. Historically, vocational education had been defined as those activities supported by the federal vocational education acts that provide for the development of the knowledge, skills, and attitudes needed in occupations requiring less than a baccalaureate degree. The Carl Perkins Vocational Education Act was intended to raise productivity and strengthen competition by preparing individuals to do productive work thus providing a skilled work force (Bruzzell, 1986, p. 8). In summary, we can remain competitive in the world economy only through a highly skilled work force.

Elizabeth Dole, Secretary of Labor stated "Vocational education lies at the heart of the national effort to upgrade work skills".

(Dole, 1989, p. 14). Vocational education plays such a critical role in expanding the skills of the work force, the economy must change and develop to stay competitive. However, current evidence suggests that most of today's students are not prepared for their present positions, let alone the more complex and technological jobs of the future. For example, a report on work force quality revealed that two out of three employers contacted in 1988 felt that entry level applicants lacked adequate basic skills (Dole, 1988, p. 18). This might account for the continued low starting salaries for vocational graduates. The employer has wanted the employee to have proven himself.

Many authorities agree that vocational education must be changed to meet future economic demands. The responsibility of guaranteeing that our economy will have enough highly skilled workers to fulfill the projected 85 percent work force demand by year 2000 is the challenge of all vocational programs in our nation. Vocational education cannot fulfill its responsibilities to our work force or our economy if it remains static (Dole, 1989, p. 19).

VOCATIONAL EDUCATION TRAINING SUCCESS

The success of vocational education programs can be measured in many ways. State and federal organizations might measure success by job placement of students trained or graduated, enrollment, self-supporting programs through the sale of horticulture plants, fringe benefits from program and passing test rates.

Eighty-seven percent of the respondents from a Montana study in 1988 considered their course work to be of immediate or long-term direct

benefit to their career plans. The graduates also related a high level of satisfaction with the usefulness of the programs and training received for performing their present jobs (Follow-up Study the, 1988, p. 24). A similar study in North Dakota, 1989, asked their 1984 vocational graduates: how their vocational training affected their employability; whether they were employed in their area of training and how they would evaluate their vocational experiences. The vocational center program graduates responded that 46 percent of the females were employed full-time and 43 percent were employed part-time. Most of the male respondents were employed full-time. Seventy-one percent of the female respondents had their first job in a field related to their training and a majority for male respondents. A majority of respondents agreed that the basic skills learned in their vocational program helped them to obtain a job and to advance in their jobs. (Follow-up Study Vocational, 1989, p. 112).

Many reasons were mentioned for program success. The single, major, criteria for a successful training program was job placement. When looking at job placement alone, Norfolk Skills Center from 1963 to 1980 had a 87.2 percent placement rate with an accumulated employment of 3,808 people (Norfolk, 1980, p. 22). Of the graduates of Norfolk Skills Center, a very small percent leave the area for employment thus most were placed and remained in Tidewater, Virginia.

Employers have a valid opinion of how successful a vocational graduate is. In South Carolina a study was done on the adequacy of vocational and technical education from the employer's view point. It was found that more than 90 percent of the respondents said "yes,

vocational education is a good source" of trained manpower. With regard to the question concerning how well vocational graduates compared to other workers, in terms of post secondary graduates, 74 percent responded, "extremely capable" or "very capable" and 20 percent "somewhat capable" (Adequacy, 1976, p. 28).

The point is made that vocational education training has been successful. The general statement by many employers explains it all.

Vocational education graduates represent good investments because they cost less to recruit, hire and train; they become contributing members of the firm more rapidly; and they are likely to remain with the company longer (Ascher, 1980, p. 35).

CONTRIBUTION OF VOCATIONAL HORTICULTURE TO SOCIETY

Today, horticulture includes the cultivation, processing and sale of fruits, nuts, vegetables, ornamental plant and flowers. As an industry, it contributes over 28 billion dollars to the United States economy every year (Reiley, 1988, p. 3). When we looked at just one state, California, the green industry importance to the economy was apparent. Two recent studies estimate the value of green industry sales and services at over 5 billion dollars a year in California alone (Hall, 1991, p. 12). The green industry is composed of landscape and horticultural services, retail nurseries, garden stores, florists, golf courses, wholesale nurseries, lawn and garden equipment manufacturers and department store garden sections.

The horticulture industry consists of four major divisions: pomology, olericulture, floriculture, and landscape and nursery industry.

Additional specialized areas include seed production and related occupations. Pomology is the science and practice of growing, harvesting, handling, storing, processing and marketing tree fruits. Olericulture is the science and practice of growing, harvesting, storing, processing and marketing vegetables. Floriculture is the science and practice of growing, harvesting, storing, designing and marketing of flowering plants. Landscape and nursery industry is the science and practice of propagating, growing, installing, maintaining, using grasses, annual and perennial plants, shrubs and trees in the landscape. Seed production is the science and practice of producing, processing and selling high-quality seed crops for use in growing a wide range of horticultural crops that grow true from seed. The related occupations are areas that provide products and services necessary in the production of horticultural crops. Those resources include goods such as fertilizers, pesticides, plant containers, machinery and services such as education and research (Denisen, 1979, p. 9).

There are various sources for jobs of employment for individuals trained in horticultural practices. These businesses include greenhouses, nurseries, garden centers, golf courses, parks, orchards, floral design shops, ground maintenance operations and vegetable and fruit growers. The Norfolk Skills Center horticulture program has placed students in many jobs with titles as greenhouse employee, nursery employee, garden center employee and manager, assistant groundskeeper, golf course horticulturist, state park horticulturist, lawn maintenance employee, pesticide applicator, landscape installer employee, estate manager and business owners. Jobs descriptions are listed in Table 1.

DESCRIPTION OF HORTICULTURE JOBS

Greenhouse Employee

A greenhouse employee grows plants in a heated glass or plastic greenhouse. The plants that are grown may be vegetables or flowers. The work involved may include the propagation of trees or ornamental shrubs from seed or cuttings. Employees in greenhouses screen, mix, and sterilize soil and place it in containers for growing plants. They sow seed, start cuttings, and transplant seedlings and plants. They water, weed, thin, prune, fertilize, and spray growing plants. They are also responsible for maintaining the greenhouse structure and equipment.

Nursery Employee

The nursery employee grows seedling and plants for landscaping, fruit production, and replanting in forests. Individuals employed in nurseries prepare seed beds; plant seedlings; prepare cuttings for rooting; and weed, cultivate, water, and prune plants. They also perform other cultural practices such as spraying and grafting. They dig, grade, and pack plants for shipment. They may cut, lift, and lay sod. Aiding in the maintenance and repair of buildings and equipment is also usually part of the job.

Garden Center Employee

The garden center employee has many jobs, including caring for ornamental plants; moving plants and supplies into selling areas; arranging plants and supplies for display purposes; and selling the various products handled by the center. They also give information and advice to customers concerning plants and lawns and their care. A garden center employee waters, sprays, and trims ornamental plants and control environmental conditions.

Lawn Maintenance Employee

A lawn maintenance employee cares for the area surrounding an industry, residence,

business, church, school, airport, apartment building, private estate, cemetery, or shopping center. These employees plant and care for lawns and ornamental plants. The work entails mowing grass, reseeding, controlling weeds, and planting and spraying ornamental plants. They also rake or vacuum the grounds and dispose of leaves and other refuse. The work may involve making minor repairs to buildings and providing for snow removal.

Golf Course Employee

Golf course employees are responsible for the overall maintenance of golf courses. They care for the turf on both the greens and fairways. They install and use irrigation and drainage equipment; clean and maintain sand traps; change the location of cups; and aerate the soil. They may also prune shrubs and tress, replace soil on greens, and repair equipment and buildings.

City, State, or National Park Employee

The park employee does that work which is necessary for the proper maintenance of parks. This includes maintaining the trees, shrubs, flowers, and lawns that make up the planting area. The city park employee deals mainly with formal flower beds and lawn area, while the state or national park worker is usually concerned with natural woodlands or forests. The work includes mowing grass, trimming the edges of walks and driveways; planting, pruning, and caring for trees, shrubs, hedges, lawns, and flower beds; controlling insects, diseases, and weeds; and caring for the soil. It also includes the removal of trash and snow, maintenance of swimming pools, care of boating facilities, general maintenance of buildings and equipment and repair of roadways and drives.

Table 1 (Employment, 1977, p. 88)

HORTICULTURE CONCEPTUAL TRAINING MODEL

The horticulture conceptual training model was designed to present information to the students in many learning situations. These adult learners normally do not grasp knowledge as presented by the academic system. Each prospective new student is tested to see if they can function in the training model. The student is interviewed to determine interest, motivation, physical and mental suitability for the horticulture program. Separate interviews are conducted by the job counselor and the instructor. The student is given an aptitude test by the job counselor. In addition, the student must meet the federal income guidelines of the Job Training Partnership Act as supervised by Southeastern Virginia Job Training Administration. A student may also opt to pay \$3,300 to receive the academic and horticulture skills training (Murray, 1987, p. 30).

The objectives of the horticulture program are to provide skills in horticulture at the job entry level, to assist the individual with obtaining employment, teach the use of pesticides, pesticide standards and application requirements leading to pesticide licensing, develop desirable work habits and attitudes, such as the ability to work safely, organize, follow instruction and to be thorough and efficient, develop among students an awareness of the value of work and work ethics. The objectives are met with the multi-approach learning model (Murray, 1987, p. 10).

During the ten month horticulture program, eighty to one hundred competency base skills are learned through the curriculum training model. The course outline of Table 2 gives one the primary areas of

study during the year. Major learning activities are self-study guide, excellent attendance, good attitude, textbook study, classroom study, independent study and field study. The self-study guide is a review of basic biology given to the student in the first week of their training. They have one month to complete this guide. A 22 page booklet asks questions of the student. The answers to the material are found in the Principles of Horticulture book. Students must have a positive attitude and attend class. A unit from the text, Introductory Horticulture, is covered and a test is administered each week. A brief description of the text for horticulture at Norfolk Skills Center is found in Table 3. In the classroom competency skills are discussed, lectured, and demonstrated. Plant walks are taken to the tropical greenhouse or the Norfolk Botanical Garden grounds during classroom time. The classroom study lasts from two hours to three hours per day. Each student is required to do an independent study each week. Students read two magazine articles per week and write a summary.

Table 2
HORTICULTURE PROGRAM
Course Outline

1. Safety Practices in Horticulture
2. Introduction to Horticulture
3. Horticulture Botany
4. Turf Management
5. Horticulture Tools and Equipment
6. Identification and Control of Insect Pests
7. Nursery Management
8. Soils and Fertilizers
9. Identification and Control of Plant Diseases
10. Greenhouse Management
11. Landscape Plant Identification and Use
12. Conservatory Plant Identification and Use
13. Landscape Contracting
14. Pesticide Selection and Use
15. Weed Identification and Control
16. Plant Propagation

(Murray, 1990, p. 28)

Table 2 shows the overall horticulture program course outline by major areas of emphasis for the year.

Table 3

INTRODUCTORY HORTICULTURE

Textbook Content

Section 1	Horticulture: An Introduction
Unit 1	Exploring the Horticulture Field
Unit 2	Plant Taxonomy: How Plants are Named
Section 2	How Plants Grow
Unit 3	Parts of the Plants and their Functions
Unit 4	Environmental Requirements for Good Plant Growth
Unit 5	Growth Stimulants, Retardants, and Rooting Hormones
Section 3	Plant Propagation
Unit 6	Seeds
Unit 7	Softwoods and Semi-hardwood Cuttings and Tissue Culture
Unit 8	Hardwood Cuttings
Unit 9	Separation and Division
Unit 10	Grafting
Unit 11	Budding
Unit 12	Layering
Section 4	Greenhouse Crops
Unit 13	Poinsettias
Unit 14	Chrysanthemums
Unit 15	Easter Lilies
Section 5	Pesticides and the Control of Pests and Diseases
Unit 16	The Biological Control of Pests and Diseases
Unit 17	The Safe Use of Pesticides
Unit 18	Insecticides
Unit 19	Fungicides, Rodenticides, Molluscicides, and Nematocides
Unit 20	Herbicides
Section 6	Container Grown Plants
Unit 21	Terrariums
Unit 22	The Art of Bonsai
Unit 23	The Interior Landscape: Houseplants and Landscaping

(table continues)

Unit 24	Shrubs and Trees
Section 7	Using Plants in the Landscape
Unit 25	Annual Bedding Plants
Unit 26	Perennials, Ornamental Grass, Vines and Bamboo
Unit 27	Narrowleaf Evergreens
Unit 28	Broadleaf Evergreens
Unit 29	Deciduous Trees
Unit 30	Deciduous Shrubs
Unit 31	Ground Covers
Unit 32	Bulbs
Unit 33	Techniques of Pruning
Unit 34	Principles of Landscaping
Section 8	Lawn and Turfgrass Establishment and Maintenance
Unit 35	Establishing Lawn
Unit 36	Maintaining the Lawn
Unit 37	Renovating the Lawn
Section 9	The Vegetable Garden
Unit 38	Planning and Preparing the Garden Site
Unit 39	Planting the Vegetable Garden
Unit 40	Caring for the Vegetable Garden
Unit 41	Favorite Garden Vegetables
Section 10	The Small Fruit Garden
Unit 42	Strawberries
Unit 43	Blueberries
Unit 44	The Bramble Fruits
Unit 45	Grapes
Section 11	Holiday Crafts and Floral Designs
Unit 46	Wreaths and Door Swags
Unit 47	Creating Holiday Centerpieces
Unit 48	Creating Bows for Floral Designs
Unit 49	Floral Designs
Unit 50	Corsages and Boutonnieres

(Reiley, 1988. p. 5)

Table 3 shows the individual units covered during the year in the N.S.C. horticulture training program by the students from the textbook INTRODUCTORY HORTICULTURE by Reiley and Shry.

The field study, called work by the student, is a grouping of eight learning labs where knowledge and new skills are put to practice. An example of one learning lab is the greenhouse where the student grows and cares for annual plants. After six weeks of lab work the student is rotated to another learning lab.

The secondary learning activities of the program are water weekend duties, pesticide certification, special projects and field trips. Students are encouraged to do water weekend duties. Students care for all the plants in the eight learning labs with regard to watering, heat and cooling conditions in the greenhouse. They earn compensatory time by working a water weekend for excused/unexcused absences. During the course of study in horticulture students learn the information and develop skilled knowledge in order to pass the Virginia Pesticide Certification exam for core certification and category III certification in ornamental plants and turf grasses. Special projects are conducted at the skills center, Norfolk Botanical Garden, and away from the gardens. These projects include a career day for middle school students, landscape projects for community organizations, design, development and installation of a ten by twenty foot landscape booth at the Virginia Beach Convention Center during the Tidewater Horticulture Conference and Trade Show. Students go on field trips to local horticulture businesses, Virginia Technical Horticulture Extension Field Day and the Tidewater Horticulture Conference and Trade Show. Here they see a business in operation, learn new research information from the research scientists, participate in workshops, lectures and talk to horticulture trade show dealers, respectively.

As each student works on the 100 competency basic skills they are encouraged to develop professional goals for one, five and ten years. Job search skills are taught. Resume development is also done. Students are required to participate in three interviews at the end of the course during class time.

A weekly self evaluation report is completed at the end of each week. The instructor checks the report for correctness and also evaluates the student. Evaluations are discussed between student and instructor then signed by both. The report is filed in the student's permanent record folder.

After all this training a student has a chance to be recognized for outstanding performance in awards. The professional Gardener Certificate one receives upon graduation is certified by the Southern Association of Colleges and Schools. Two students per year have the opportunity to attend the Williamsburg Garden Symposium. As an additional award or bonus two tours, one or two days in length, to places like Longwood Gardens in Kenneth Square, Pennsylvania and the National Arboretum in Washington, D.C. are planned.

SUMMARY

Many successful vocational education programs were cited in the review of literature. Most of these programs maintain excellence by monitoring national and state reports on future needs in the world of work. This allowed the institution to change curriculum as trends

developed so that a trained student was always be in demand in the work force. The Norfolk Skills Center has been a part of the success of vocational education by changing courses offered and subject matter to meet the needs of the industry. The research study suggests guidelines for future program improvement. An instrument to collect the information on the Norfolk Skills Center horticulture program is described in methods and procedures. Chapter IV discusses the specific findings of the survey.

CHAPTER III

METHODS AND PROCEDURES

One never knows if they have really accomplished a task unless an evaluation is done by someone else. Student trainees have been a valuable resource tool for evaluating a learning program if utilized in the proper manner. This thought was the basis for the research plan: to determine if at-risk-adults are adequately trained to perform well and secure a job after utilizing Norfolk Skills Center horticulture program. To secure this information a survey instrument was developed. Chapter III, Methods and Procedures describes the population, description of instrument, methods for collecting data and procedures for statistical analysis for this study.

POPULATION

The population was composed of persons deemed eligible by the criteria set-up by the Job Training Partnership Act. In summary, these people were male and female, between 18 and 55 years of age, unemployed, possessed some skills, had poor career track goals and may also have been lacking in a skill or trade. These people met the criteria of either Title III, were dislocated workers or considered a handicapped youth. Almost 50 percent of the population should have been non-high school graduates but some student trainees had post-high school academics at community colleges, universities and a few graduated from

college. The population also varied from non-paying to paying for the ten months of training. The literacy requirement changed from non-literate to being able to pass an adult basic education test in Math and English. The total population for this study was forty-two.

DESCRIPTION OF INSTRUMENT

A survey was designed and administered to forty-two Norfolk Skills Center horticulture student graduates from October 1987 to present. The data for this study was collected by using a survey consisting of open and close-ended form questions. Survey questions dealt with answering the research goals (questions 1-4) as stated in Chapter I. A copy of the survey can be found in Appendix A.

METHODS FOR COLLECTING DATA

The researcher first got permission to conduct the survey from Mr. Ray Murray, Director, Norfolk Skills Center. A sample of the letter requesting permission to conduct the survey is found in Appendix C. After permission was granted, the researcher mailed the survey to the students that had graduated. The survey cover letter was also included which explained the purpose of the study and asked them to please complete the survey (Appendix B).

PROCEDURES FOR STATISTICAL ANALYSIS

Upon receiving the responses, the researcher compiled the data from the study. After correlating and tabulating the results of the survey, percentages were calculated for each of the items on the survey. The data presented in Chapter IV, Findings, is in the form of tables and discussion.

SUMMARY

In this chapter the methods and procedures used to secure the data for the study was discussed. An open and close-ended form survey was administered by the researcher to forty-two of the Norfolk Skills Center horticulture program graduates during the spring of 1991. The data received from these surveys was discussed in the following chapter.

CHAPTER IV

FINDINGS

The purpose of this chapter was the presentation of the findings determined by research conducted during the study. The statistical results of the findings are contained in this chapter. A horticulture education survey was mailed to forty-two former horticulture adult students who were enrolled and graduated from Norfolk Skills Center Horticulture Program from fall 1987 to summer 1991. The purpose of the survey was to secure data from these former students regarding employment history. Of the forty-two students contacted, twenty-seven, 64 percent, responded to the survey.

The goals for this study were to determine:

1. Did the adults get hired in horticulture?
2. Was the job an entry level position or did the adult enter at a higher level?
3. How well did the N.S.C. horticulture program equip the adult for their job?
4. What modifications should be made with regard to the curriculum, new equipment, and/or other recommendations?

SURVEY RESULTS

A checklist and answer questionnaire was used to secure the data for this study which encompassed several areas of concern. The specifics covered were: 1) Did you get a job after graduation in the horticulture industry? 2) was your first job an entry level position? 3) how long employed in the horticulture industry? 4) are you currently employed in horticulture industry? 5) starting salary? 6) salary now? 7) do you have fringe benefits? 8) was your training adequate for the entry level position? 9) strengths of the program? 10) weaknesses of program? 11) suggestions for modifications and 12) what were your career goals?

The following data, tables, and narrative listing indicates the various students responses to this survey. A total of forty-two surveys were sent out with twenty-seven responding for a total of sixty-four percent. In the discussion of the findings, 27 represents the total number (N) or 100 percent.

In the first section of the survey, the students were asked to indicate if they got a job after graduation in the horticulture industry, Question 1 (Table 4). The number of students getting a job after graduation was 19 or 70 percent. Those students who did not get a horticulture job after graduation was 8 or 30 percent.

Table 4

**DID YOU GET A JOB AFTER GRADUATION IN THE
HORTICULTURE INDUSTRY?**

	Number Responding	Percentage of Total Response
Yes	19	70
No	8	30
Total	27	100

Table 4 shows the number and percent of graduated students from N.S.C. horticulture program getting a job after graduation.

The following item relates to: was your first job an entry level position in horticulture? The survey showed 16 responses with a positive "yes" answer or 59 percent of the respondents. Forty-one percent or 11 student responses were a "no" response.

Table 5

WAS YOUR FIRST JOB AN ENTRY LEVEL POSITION?

	Number Responding	Percentage of Total Response
Yes	16	59
No	11	41
Total	27	100

Table 5 shows the response by students to their first job as an entry level position.

The job titles reported in the survey for entry level positions are as follows:

Table 6

JOB TITLES FOR ENTRY LEVEL POSITIONS

Job Title	Number Responding	Percentage of Total Response
Lawn maintenance worker	4	25
Greenhouse worker	4	25
Nursery worker	2	13
Horticulturist worker		
(golf course)	2	13
Garden center employee	2	13
Groundskeeper worker		
(golf course)	2	13

Table 6 shows the job titles for entry level positions that the graduated student obtained.

When one analyzes the 11 "no" responses for a "no entry level job position," we find advance horticulture skill level positions and others being listed by the students.

Table 7

JOB TITLES OF STUDENTS WHO DID NOT GET AN ENTRY LEVEL JOB

Job Title	Number Responding	Percentage of Total Response	Advance Skill Horticulture Level Job
Estate Manager (Caretaker, Gardener, Supervisor)	1	9	
Horticultural Therapist	1	9	
Horticulturist	1	9	(3) 27
Housewife	4	36	
Senior Citizen Caretaker	1	9	
Hair Stylist	1	9	
Computer Programmer	1	9	
Unemployed	1	9	(8) 73
Total	11	100	100

Table 7 shows the job division by title of 11 respondents, 4 of whom did not get an entry level job.

Forty-one percent (11) of the students responding did not get an entry level position in horticulture but a closer look at three job titles shows advance skill level jobs in horticulture or 27 percent of the no responses. Eight or 73 percent of the "no" entry level job responses were from students who went back to previous jobs they had before training, new jobs or remained unemployed. When you added the three advance horticulture skill level jobs to the sixteen horticulture entry level jobs or 19 (70.4 percent) of the total students graduating were employed in horticulture. This supports the data results of Question 1.

The responses to Question 4 (Table 8), "how long were you employed in the horticulture industry?", were a range from zero months (8 responses) to four years (3 responses) with the bulk being employed from 1 year (2 responses) to four years (3 responses).

Table 8

HOW LONG WERE YOU EMPLOYED IN THE HORTICULTURE INDUSTRY?

Time	Number Responding	Percentage of Total Response
Months		
0	8	30
1		
2		
3	1	4
4		
5		
6		
7		
8	1	4
9	1	4
10		
11		
12		
Years		
1	2	7
1.5	4	15
2	3	11
2.5	1	4
3	2	7
3.5	1	4
4	3	11
5		
Total	27	100

Table 8 shows how long the graduated students were employed in the horticulture industry.

How long one worked in the industry is interesting. How many are currently employed in the horticulture industry and how many can provide data of substance? The response to Question 5 was 14 positive answers or 52 percent are still employed in horticulture jobs. Thirteen or 48 percent have left or never got jobs in the horticulture industry.

Table 9

ARE YOU CURRENTLY EMPLOYED IN THE HORTICULTURE INDUSTRY?

	Number Responding	Percentage of Total Response
Yes	14	52
No	13	48
Total	27	100

Table 9 shows the number of graduating students still employed in the horticulture industry.

What positive financial impact have the students made on the economy by being employed after graduation? This has a far reaching impact throughout the economy but it is important to define their starting salary (Question 6, Table 10). The starting salary ranged from zero to more than \$12 dollars per hour. The data is reported in Table 10.

Table 10

STARTING SALARY

Rate Per Hour (Dollars)	Number Responding	Percentage of Total Response
Unemployed - No Salary	5	19
3.50-4.00	2	7
4.00-5.00	7	26
5.01-5.50	4	15
5.51-6.00	3	11
6.01-6.50	0	0
6.51-7.00	1	4
7.01-8.00	2	7
8.01-9.00	0	0
9.01-10.00	1	4
10.01-11.00	1	4
11.01-12.00	0	0
12.01 or more	1	4
Total	27	100

Table 10 shows the starting salary for all graduated students. A total of 5 students were unemployed at the time of the survey (4 housewives and 1 unemployed).

The data from the starting salary question, number 6, reflected several things. Three somewhat divided groups were shown from the data: zero income: starting salary - \$3.50 to \$6.00: and better than starting salary - \$6.51 to \$12.01+. Five students or 19 percent were not employed or no income while 22 students or 81 percent had starting salaries or more. The responses in the starting salaries - \$3.50 to \$6.00 - was 16 or 59 percent. Six students or 22 percent gave responses in the group - better than starting salaries \$6.51 to \$12.01+.

With 81 percent of the graduates obtaining a starting salary or job, what is their salary range now? (Question 7. Table 11).

Table 11

SALARY RANGE FOUR YEARS LATER OR LESS

Rate Per Hour (Dollars)	Number Responding	Percentage of Total Response
Unemployed-No Salary	8	30
3.50-4.00	1	4
4.00-5.00	1	4
5.01-5.50	5	19
5.51-6.00	0	0
6.01-6.50	0	0
6.51-7.00	3	11
7.01-8.00	1	4
8.01-9.00	1	4
9.01-10.00	2	7
10.01-11.00	1	4
11.01-12.00	0	0
12.01 or more	4	15
Total	27	100

Table 11 shows the salary range of the graduated students after four years or less.

When the researcher looked at the three salary range groups as in Question 6, (Table 10), zero income: starting salary - \$3.50 to \$6.00: and better than starting salary - \$6.51 to \$12.01+, we find 8 students or 30 percent of the respondents not employed or no income while 19 students or 70 percent were still employed after almost four years or less. The responses, 7 or 30 percent, in the starting salaries - \$3.50 to \$6.00 were given by the students. The better than starting salaries \$6.51 to \$12.01+ recorded 12 responses in this group or 44 percent of the total. Starting salaries and present salaries are important to students and employers but also important are fringe benefits. Question 8. The response was 15 who said "yes" or 56 percent and 12 who said "no" or 44 percent.

In Question 8, do you earn fringe benefits? 15 or 56 percent said yes and gave the benefits that applied to them. (Question 9, Table 12).

Table 12

FRINGE BENEFITS

Fringe Benefit	Number Responding	Percentage of Total Response
Vacation w/Pay	12	80
Medical Plan	10	67
Sick Leave w/Pay	8	53
Dentist Plan	7	47
Retirement Plan	6	40
Educational Seminars	5	33
Christmas Bonus	4	27
Travel Funds	3	20
Life Insurance	2	13
Comp Time/Personal Days	2	13
Vehicle	2	13
Turkey, Ham. etc.	2	13
Holidays (Paid)	1	7
Profit Sharing	1	7
Long Term Disability Plan	1	7
Food	1	7
Clothes	1	7
Stock in Company	1	7

Table 12 shows the results of Question 9, check the benefits that apply to you, are listed per benefit item.

In regard to Question 9, (Table 12), if "yes", check the benefits that apply, a total of 18 different fringe benefits were mentioned by the students. Only one fringe benefit, vacation with pay, 12 responses or 80 percent, came close to being offered to all fifteen "yes" respondents. Sixty-seven percent of the yes responses had a medical plan as a fringe benefit and sick leave with pay was offered to 53 percent. Dentist plan to 47 percent and retirement plant to 40 percent of the "yes" respondents was granted to round out the top five fringe benefits. Educational seminars (33 percent), Christmas bonus (27 percent) and

travel funds (20 percent) were the next three highest fringe benefits with a tie by four categories, life insurance (13 percent), vehicle (13 percent), comp time/personal days (13 percent) and turkey, ham, etc. (13 percent) for the ninth most granted fringe benefit. The other six fringe benefits, holidays (paid), profit sharing, long term disability plan, food, clothes and stock in company, each only received 7 percent of the total responses.

In Question 10, graduate horticulture students were asked if the knowledge base and skill level training from the horticulture program was adequate for the entry level position they obtained? Twenty-two or 81 percent gave a "yes" or positive response to the entry level job skill training program question. Two or 7 percent stated a "no" response to the training with only three or 11 percent saying yes/no for what ever that means.

Students were asked to list the strengths of the horticulture program in Question 11. Table 13. Twenty-seven or 100 percent of the responding students listed a strength. The fifty strengths are listed in Table 13.

Table 13

PROGRAM STRENGTHS

Strengths	Number Responding	Percentage of Total Response
Hands on experience	14	52
Instructor knowledge	4	15
Industry	4	15
Plant I.D.	4	15
Instructor guidance	2	7
Good environment at Botanical Gardens	2	7
Studying for Category III pesticide license	2	7
Knowledge to use equipment	2	7
Take home plants	1	4
Wide range of information about horticulture	1	4
Person could specialize in any field of horticulture	1	4
Small class size	1	4
Learning by doing	1	4
Job search assistance	1	4
Mr. Grainger taught a realistic approach that related to "real life" knowledge that translated to practical application on the job	1	4
Landscaping and landscaping maintenance	1	4
Fun to learn	1	4
Growing plants (production)	1	4
Variety	1	4
Greenhouse management	1	4
Plant culture and	1	4
Pruning	1	4
Transplanting annuals	1	4
Soils	1	4

Table 13 lists the strengths of the N.S.C. horticultur program by the responding students.

Next, the negative information about the N.S.C. horticulture program was an indication of the need to strengthen the curriculum, demonstration and lab areas. Of the 27 responding students to the survey, 26 responses were given, there was one case of missing data reporting the weakness of the program. The statement gaining the highest recommendation by the graduate horticulture student was: need more time for the training, 1.5 to 2 years. The next highest recommendation, weakness stated was: none (no weakness mentioned), too much work, need more/new equipment to learn from, and need more time to be spent on use and management of pesticides. The 32 weaknesses cited are listed below (Question 12, Table 14).

Table 14

PROGRAM WEAKNESSES

Weaknesses	Number Responding	Percentage of Total Response
Need more time for training (1.5 to 2 years)	6	22
None	5	19
No weakness	5	19
To much work	3	11
Need more/new equipment to learn from	3	11
Need more time to be spent on use and management of pesticides	2	7
No response	1	4
Need more time in specific lab area (greenhouse, landscaping, pesticide control)	1	4
Open entry to class	1	4
Need an assistant	1	4
It is up to the individual to get the most out of the program	1	4

(table continues)

Weaknesses	Number Responding	Percentage of Total Response
I think the students should get more money	1	4
Not knowing what to do	1	4
Need approval (after graduation) interface to continuing education in horticulture at other college level programs	1	4
Academically, I would have appreciated more in depth knowledge in the field for example 1) increased knowledge in botany, 2) more supervision in spraying 3) less time spent in making booth for horticulture conference.	1	4
Would like to see more in depth classroom training	1	4
Horticulture subjects need to be condensed because wide range of material confusing and overwhelming to new student. Streamline curriculum.	1	4
Need more educational information such as videos. etc.	1	4
More open freedom in garden	1	4

Table 14 lists the weaknesses of the N.S.C. horticulture training program as given by the graduated students.

In response to Question 13, the modifications in the program were given by the students for improvement in the program depth, hopefully. Again like Questions 11 and 12, Question 13 had 27 students responding or 100 percent to give suggestions for modifications. Twenty-five or 93 percent gave a written statement response and 2 students or 7 percent had no written suggestion. Four modifications were mentioned more than others: more equipment and more knowledge of machinery (tractors, front-

end loader and other big equipment) operation, the instructor needs an assistant, less chemical use by students, and no modifications recommended. These and other suggestions for modifications follow in Table 15.

Table 15

PROGRAM MODIFICATIONS

Suggestion for Modification	Number Responding	Percentage of Total Response
More equipment and more knowledge of machinery (tractors, front-end loader, and other big equipment) operation	5	19
Mr. Grainger needs an assistant	4	15
No	3	11
Less chemical use by students	3	11
No response	2	7
More knowledge of pesticide licenses	1	4
Studying about bonsai	1	4
Course made longer	1	4
Floral arrangement	1	4
More knowledge of plant material (Latin and common names) in the field	1	4
Need more up to date equipment	1	4
Do more projects which may bring more money to the program so that the class may visit more points of interest in the industry	1	4
More visuals needed	1	4
Considering today's competitive job market I feel the horticulture program at N.S.C. needs to be academically upgraded to maintain its credibility in the community	1	4
More in depth instruction in landscaping and landscape maintenance	1	4
Add specialization to program- offering satellite courses included in regular sessions (say two morning a week)	1	4

(table continues)

Suggestion for Modification	Number Responding	Percentage of Total Response
Have local employees visit class to conduct class on their specific job or business	1	4
It would be much easier on students and instructor for a group to begin together as opposed to one at a time.	1	4
More cooperative education with other school's "hort" activities	1	4
Visiting professors or professional-in-field seminars	1	4
Need post-grad program to professional level certification in Virginia	1	4
Need post-grad feedback annually for positive feedback	1	4
More hands on. I would have appreciated wrapping the tree after being shown how to do it.	1	4
More plant identification and testing	1	4
Help in job placement	1	4
Make program longer than 10 months (1 1/2 to 2 yrs)	1	4
Lab areas provided for each student or 2 students	1	4
Specific personal tools required. ex. pruning sheers, gloves. trowels, etc.	1	4

Table 15 lists the suggested modifications given by the graduated students for N.S.C. horticulture program.

One's career goals provide the pathway to one's future professional life. Question 14 asked the student what were their career goals before entering into the horticulture training program? All 27 students, 100 percent, responded to the career question. The career goal, number and percent are listed below. (Table 16).

Table 16

CAREER GOALS BEFORE ENTRY

Goal	Number Responding	Percentage of Total Response
Education	16	59
Develop career path	11	41
Get job	10	37
Job training	9	33
Start business	6	22
Graduate	3	11
Feed myself	2	7
None	2	7

Table 16 shows the responses by the graduated students in regard to their career goals before entering N.S.C. horticulture program.

Question 15 was asked so one could determine if a student's career goals had changed after four years or less after graduating from the horticulture training program. All 27 students, 100 percent, gave a response to the question of career goals now. Three 'career goals now' responses, to open my own business, attending Tidewater Community College in horticulture and/or floriculture curriculum and looking for a job obtained the most responses of current student career goals. The narrative list of current career goals is in Table 17.

Table 17

CURRENT CAREER GOALS (NOW)

Goal	Number Responding	Percentage of Total Response
To open my own business	7	26
Attending T.C.C. in horticulture and/or floriculture curriculum	3	11
Looking for a job	3	11
To expand my business/become one of the top landscape lawn maint. company in the area	2	7
No response	2	7
To work towards a degree possibly	1	4
Some	1	4
Go back an continue to cut hair	1	4
I am satisfied with the level that I'm at	1	4
Aid in the creation/ development of a beautiful garden	1	4
Attend law enforcement college (Weber State U. criminal justice student)	1	4
To pursue horticulture therapy and or teach vocational education in horticulture and agriculture	1	4
Want to share the knowledge that I've obtained, wish to market my experience (Horticulture consultant) but unable to find entry	1	4
More training in horticulture and environmental training	1	4
To help run a convient	1	4
No response	1	4

Table 17 lists the current career goals of the responding graduated students from N.S.C. horticulture program.

SUMMARY

The findings of this study document the responses of former students in the Norfolk Skills Center horticulture program in Norfolk, Virginia. Twenty-seven of the students who were mailed the horticulture education survey responded. Forty-two were originally sent out. This was a response rate of 64 percent. The statistics resulting from their responses were tabulated in this chapter. These findings were used to arrive at conclusions. These conclusions were examined and from them recommendations were made. A summary of the entire study is also included in the next chapter.

CHAPTER V

SUMMARY, CONCLUSION AND RECOMMENDATIONS

The purpose of this chapter was to report the summary, conclusions and recommendations and summarize the findings of the research report.

SUMMARY

This study was conducted to analyze the information from 27 graduates of N.S.C. horticulture program about their entry level position in the horticulture industry. Also, the purpose was to find out if students were adequately trained, salary history, strengths and weaknesses and suggested modifications in the horticulture program. Following the introduction where background material was presented, the problem was stated.

Briefly, the problem was to determine if at-risk-adults were securing a job and performing well in the field of horticulture after training through Norfolk Skills Center horticulture program. The questionnaire was mailed to those adult students who had graduated, inquiring about their employment history and opinions about the training experiences. The intent was to investigate whether the program was beneficial or if changes were needed to better train the future graduate for the horticulture industry.

In the review of literature, professionals in the field of vocational education, education, science and technology have stated repeatedly that changes need to occur to keep up with future demands in the

workplace. Since we have entered into the information age, global competition has become a reality and placed new challenges upon education. Vocational education will need to make changes to prepare our future workers.

Since the student's/employee's success in obtaining employment is the yardstick of measurement, the research goals for this study were designed towards the students who had graduated. The research goals were to determine the following:

1. Did the adults get hired in horticulture?
2. Was the job an entry level position or did the adults enter at a higher level?
3. How well did the N.S.C. horticulture program equip the adults for their job?
4. What modifications should be made with the curriculum, new equipment and for other recommendations?

A survey instrument was designed and administered by mail to secure the data necessary to conduct this study. The survey was properly completed by twenty-seven students. The results of this survey provided data for the findings of the study. The data was then presented in a brief explanation and in table forms with percentages. From these findings several conclusions were drawn about the N.S.C. horticulture program.

Before one looks at the conclusion, validity is a concern of the researcher. One must always look at the internal and external validity of the study. The researcher will discuss the experimental controls that have created a conclusion that differences did occur as a result of

the experimental treatment. In doing a study, a researcher hopes that the results can be applied to other people at other times and in other places. The classes of extraneous variables that can be a source of internal bias will be addressed. Internal validity of the study was affected by the historical change in the N.S.C. program. Student eligibility criteria was changed from illiterate to a proven Math, English and language ability at the 5th grade level. It is expected that a literate student would be more employable in any job market. All the students that had graduated under present instructor, Ron Grainger, received a survey to respond to. All students were subjected to the same experiences. Maturation had no effect. Testing was not applicable. Instrumentation was not a problem. Statistical regression was not applicable.

Experimental mortality was not a problem. The survey was sent only to the students who graduated from the N.S.C. horticulture program. The study was not tainted by issues of external validity. Thus, the conclusions were viewed with a clear perspective.

CONCLUSIONS

In conclusion, a fifteen point Horticulture Educational Survey was administered to graduated horticulture students in July of 1991. The purpose of the survey was to secure data to see if answers to N.S.C. horticulture program's mission, to provide knowledge and skills in horticulture for adult students to help them become employed in the horticulture industry, is being done.

Four research goals were developed in this study that answers were desired for:

1. Did the adults get hired in horticulture? Seventy percent of the students obtained employment in the horticulture industry after graduation. However, 81 percent of the graduates were employed and working after graduation.

2. Was the job an entry level position or did the adults enter at a higher level? Fifty-nine percent of the adult students said their first job was an entry level position. The researcher had hoped this figure would be higher so one needs to look at the "no" responses. Three out of the eleven or sixteen percent of the "no" responses were advance horticulture job positions requiring previous work experience and extensive horticulture skill training and education to qualify. This gives a total of nineteen or seventy percent employed in horticulture.

3. How well did the N.S.C. horticulture program equip the adults for their job? With seventy percent of the students being employed in horticulture and sixteen percent of those being employed in highly skilled horticulture positions, N.S.C. training model is graduating and training adult students to meet the horticulture industry job requirement. Graduating student salaries did increase after four or less years of working in the horticulture job market.

4. What modifications should be made within the curriculum, new equipment, and for other recommendations? Both the students and the instructor suggest more training in the use of heavy equipment and more knowledge about machinery operation and safety. The responding students suggested modifications in program length to at least 12 months but one

and one half to two years would be better. Several suggested modifications in program design and content. Outside speakers, instructors, business employers, professors and lay-professionals were suggested as ways to increase course enrichment. Students need job search training earlier on around the seventh month of training instead of the ninth month.

This was a prospective, exploratory, study to determine significance in training at risk adults to perform well and secure a job after utilizing the N.S.C. horticulture program and predict the continued relevance of the horticulture conceptual training model of the N.S.C. horticulture curriculum.

RECOMMENDATIONS

Based on the survey findings, summary and conclusions, the researcher makes the following recommendations:

1. The N.S.C. horticulture program success and the study has determined no alternative action is to do nothing.
2. At present, the time span of the study is only 7 months, but spread out over 10 months. The responding students recommendations was to increase the program length to at least 12 months.
3. Students need to be made aware of the jobs they are qualified for in the application process. Some have skills, knowledge and work experiences to qualify them for positions other than entry level.
4. It is recommended that job placement training be started earlier around the seventh month instead of the ninth month.

5. It is recommended that students get involved in the horticulture industry as volunteers and/or part-time jobs before graduating.

6. Horticulture graduating students desire and need more consistent follow-up from N.S.C. and horticulture instructor. The program has a design for follow-up but its success may be due to volume of other responsables.

7. It is recommended that the horticulture instructor needs to encourage graduating students to stay in contact with instructor for new and complementing jobs.

8. Horticulture instructor needs to conduct a student reassessment section with students about their present abilities near graduation to increase self worth and positive image before interviewing.

9. It is recommended that guest lectures and industry personnel be invited to the horticulture class to discuss job opportunities, company organization of functions and specific horticulture topics of interest.

10. It is recommended that the students need experience driving and using heavy duty horticulture equipment. The N.S.C. should identify and contract ownership the use of heavy duty horticulture equipment.

11. It is recommended that co-variance testing be done with regard to the data collected and results reported.

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APPENDICES

APPENDIX A, Sample of Research Survey

APPENDIX B, Sample of Cover Letter

APPENDIX C, Sample of Permission Letter

APPENDIX A
RESEARCH SURVEY

HORTICULTURE EDUCATION SURVEY

PURPOSE: This survey is being undertaken to determine if the horticulture training program at N.S.C. gave you the knowledge and skills to be employed in the horticulture industry. The resulting data will be used to modify and/or strengthen the curriculum.

Directions: Please indicate your response by placing a check () or an answer in the space provided.

1. Did you get a job after graduation in the horticulture industry? Yes _____ No _____

2. Was your first job a entry level position (i.e., landscape worker, greenhouse worker, nursery worker, garden center employee, lawn maintenance worker, etc.)? Yes _____ No _____

3. If no, what was your job title on your first job?

4. How long were you/or have you been employed in the horticulture industry? _____

5. Are you currently employed in the horticulture industry, or related field? Yes _____ No _____

6. In your first job after graduation, what was your starting salary?

\$4.00 - \$5.00 _____	\$7.01 - \$8.00 _____
\$5.01 - \$5.50 _____	\$8.01 - \$9.00 _____
\$5.51 - \$6.00 _____	\$9.01 - \$10.00 _____
\$6.01 - \$6.50 _____	\$10.01 - \$11.00 _____
\$6.51 - \$7.00 _____	\$11.01 - \$12.00 _____
	\$12.01 or more _____

7. What would be your salary range now?

\$4.00 - \$5.00 _____	\$7.01 - \$8.00 _____
\$5.01 - \$5.50 _____	\$8.01 - \$9.00 _____
\$5.51 - \$6.00 _____	\$9.01 - \$10.00 _____
\$6.01 - \$6.50 _____	\$10.01 - \$11.00 _____
\$6.51 - \$7.00 _____	\$11.01 - \$12.00 _____
	\$12.01 or more _____

8. Do you earn fringe benefits? Yes _____ No _____

9. If yes, check the benefits that apply.

Retirement Plan _____	Vehicle _____
Medical Plan _____	Travel Funds _____
Dentist Plan _____	Education Seminars _____
Vacation w/Pay _____	Christmas Bonus _____
Sick Leave w/Pay _____	Turkey, Ham, etc. _____
Others _____	

10. Do you feel your knowledge base and skill levels from the horticulture training was adequate for the entry level position you got? Yes _____ No _____

11. What were the strengths of the program? _____
- _____

12. Does the program have any weaknesses? _____
- _____

13. Do you have suggestions for modifications in the program? _____
- _____
- _____

14. Before your entry into the horticulture training program, what was your career goals?

None _____	Graduate _____
Feed Myself _____	Get Job _____
Education _____	Start Business _____
Job Training _____	Develop Career Path _____

15. What are your career goals now? _____
- _____

Thank you for your assistance! Your response will strengthen the Norfolk Skill Center horticulture program in becoming more responsive to the needs of the students and horticulture industry.

APPENDIX B
SURVEY COVER LETTER

July 30, 1991

Mr. Tom Smith
5411 Fairfield Blvd.
Tree Town, VA 23507

Dear Tom:

The Norfolk Skill Center has decided that a comprehensive improvement plan is needed for adult vocational education. I am currently spearheading a subcommittee on Horticulture Education.

Because our present horticulture curriculum has been in use for many years, it was suggested that modification may need to be made to meet the 90's job requirements in horticulture. We will also be evaluated in 1992 for a five year accreditation by the Southern Association of Colleges and Schools. A certificate approved by the Virginia Department of Education and accredited by the Southern Association of Colleges and Schools should have real meaning to all our graduates.

As a graduate, I am sure you want your certificate to have creditability in the academic community. Also, as a graduate, you have been identified as an individual that could assist in the determination of specific modification that should or should not be recommended. Enclosed you will find a survey of jobs, job titles, salary, career goals, program strengths and weaknesses, and suggestions for modifications. Although this survey is also a vital part of my master's program at Old Dominion University, the results will help the Horticulture Education Subcommittee to create a curriculum that will meet present and future needs.

I greatly appreciate your time and assistance in completing this survey. Enclosed you will find a self-addressed envelope. Your prompt return of the survey by August 7, 1991 will be greatly appreciated. If you have any questions please call me at my home, 481-3727 or at work, 853-6110.

Sincerely,

Ronald A. Grainger

APPENDIX C
LETTER FOR PERMISSION

June 12, 1991

Mr. Ray Murray
Director, Norfolk Skill Center
922 W. 21st Street
Norfolk, VA 23517

Dear Mr. Murray:

I am currently pursuing a masters degree in adult education from Old Dominion University. My anticipated date of graduation is December, 1993.

The title of my thesis is "A Study to Determine if At-Risk-Adults are Adequately Trained to Perform Well and Secure a Job after Utilizing Norfolk Skill Center Horticulture Program". In order to complete the paper, I would like to survey the forty horticulture student graduates from 1988 to present. I am, therefore, requesting your permission to survey the students.

Thank you for your assistance in this matter, Mr. Murray. I look forward to receiving a response from you by July 1.

Sincerely,

Ron Grainger