

**AN ASSESSMENT OF A VOCATIONAL HORTICULTURE  
TRAINING CURRICULUM AT A SCHOOL FOR JUVENILE  
OFFENDERS**

by Catherine Palumbo McGuinn

Thesis submitted to the Faculty of the Virginia Polytechnic Institute and State University  
in partial fulfillment of the requirements for the degree of  
Master of Science  
in  
Horticulture

Approved by:

Dr. Paula Diane Relf, Chairperson

Dr. Alan McDaniel

Dr. Clifton Bryant

March 31, 1999

Blacksburg, Virginia

**KEYWORDS:** horticulture, juvenile offenders, vocational training, at risk youth,  
horticulture therapy

# **AN ASSESSMENT OF A VOCATIONAL HORTICULTURE TRAINING CURRICULUM AT A SCHOOL FOR JUVENILE OFFENDERS**

by Catherine Palumbo McGuinn

## **ABSTRACT**

A vocational horticulture curriculum was assessed for its effectiveness in strengthening social bonds and changing attitudes about personal success and job preparedness in a group of juvenile offenders. The curriculum focused on vocational training and entry-level job skills in horticulture and landscaping and prepared the youth for internship positions in grounds maintenance. Pre/post-tests based on Hirsch's tests of social bond for juvenile delinquents were developed to address attitudes toward school, teachers, peers, opinions on personal success, and environmental attitudes. A separate pre/post test dealt with careers and aspirations. Results from these tests were compared to tests administered at a comparable program in an urban setting. Behavioral records for one semester before and the semester during the horticulture curriculum were compared. Daily journals maintained by service-learning student mentors were analyzed for observational themes, as were teachers' observations and project follow-up interviews. Success of the program was based on the students' successful completion of the program, students' desire and ability to be hired for summer internships and/or employment in horticultural related jobs.

Due to the limited size of the study group (6), this research project intends only to provide a profile of several youths' response to vocational horticultural training with regard to the objectives stated above. It is exploratory in nature and offers ideas for future larger scale research and confirms some existing trends in research with juvenile offenders.

This paper is dedicated to my daughter  
Cecilia Ann McGuinn  
Born August 31, 1998

## **Acknowledgments**

I would first like to thank my husband, Robert, for everything. There were never any questions when I asked for your help, and you always were ready to reach above and beyond even my expectations to help make this project a success. Secondly, I would like to thank Dr. Diane Relf for providing the opportunity to do this research and for her expertise in helping me to do so. In addition, I would like to thank Dr. Alan McDaniel and Dr. Clifton Bryant, as well as Dr. Donald Shoemaker for their expert advice and assistance with this project. Thirdly, I would like to thank the students at the AEPPS. You were a joy to work with and I wish each of you the best of luck with all your future endeavors. I would like to thank the staff at the AEPPS, for allowing the research to be conducted at their school, and also the guest lecturers, the volunteers, and especially the mentors, who gave so much of their time. Without all of you all, none of this would have been possible. I would also like to thank Linda for her editing, Sheri and Mary for their advice and companionship, and the entire office of Consumer Horticulture at Virginia Tech for their assistance, and for all the little things they did to help me along the way during these past two years. Finally, I would like to thank my Mom and Dad and my brother, Carmine and my sisters, Patricia and Christine for all their encouragement and support, as always.

## **Table of Contents**

Abstract .....	ii
Dedication.....	iii
Acknowledgments .....	iv
Table of Contents .....	v
List of Tables .....	vii

### **Chapter I.: Literature Review**

A History of Horticultural Therapy .....	1
Juvenile Delinquency and Social Deviance.....	4
Horticultural Therapy, Vocational Training, and Juvenile Delinquency .....	7
Social Bonding Theory.....	11

### **Chapter II.: Description of the Research**

Introduction.....	13
Materials and Methods.....	15

### **Chapter III.: The Test Results and Discussion**

Social Bond Composite Test Score Results for the Youths at the Alternative Education Program School.....	26
Pre and Post “Careers and Aspirations” Test Results and Discussion .....	44

### **Chapter IV.: The Behavioral Charts**

Comparisons from the Semester Before the Research Project Began and the Semester of the Research Project .....	53
---	----

### **Chapter V: Internship, Related Work Experience, and Follow-up Interviews**

The Follow-up Interview of the Students at the Alternative Education Program School .....	56
--	----

### **Chapter VI.: Conclusions and Recommendations**

Conclusions .....	58
Recommendations Received for Future Programs .....	63
Author’s note	

<b>Literature Cited .....</b>	<b>66</b>
-------------------------------	-----------

### **Appendix**

Appendix 1, Curriculum.....	70
Appendix 2, Social Bond Test .....	72
Career and Aspirations Test .....	75
Appendix 3, Selected Journal Entries from Mentors at the Alternative Education Program Project School .....	79

Appendix 4, The Alternative Education Program Project School Administration's  
Post Project Comments ..... 100  
Appendix 5, The Alternative Education Program Project School Follow-Up  
Interview Comments ..... 101

Vita

## **List of Tables**

### **Table 1, p. 26**

Overall scores on the social bond test pre- and post project.

### **Table 2, p. 30**

Social bond test results for section 1, School.

### **Table 3, p. 32**

Social bond test results for section 2, Teachers.

### **Table 4, p. 35**

Social bond test results for section 3, Peers.

### **Table 5, p. 38**

Social bond test results for section 4, Opinions.

### **Table 6, p. 41**

Social bond test results for section 5, Environmental Attitudes.

### **Table 7, p. 43**

Career and Aspirations Test results.

### **Table 8, p. 49**

Job rating results.

### **Table 9, p. 53**

Social bond test score summary broken down by location of student.

### **Table 10, p. 56**

Summary of the behavioral charts broken down by date.

## **CHAPTER I: LITERATURE REVIEW**

### **A HISTORY OF HORTICULTURAL THERAPY**

Horticulture has been used in institutions and in correctional systems both as work and as therapy for a number of years (Plant-People Council, 1992, Relf, 1992). Since the 1600's, which marked the beginnings of organized institutions in the United States and Europe, the understanding of a people-plant connection has evolved into an accepted approach to treatment (Rusche and Kirchheimer, 1997). The historical use of horticulture in a treatment context can be traced to ancient Egypt. Court physicians prescribed walks in palace gardens for royalty who were mentally disturbed because of the reported quieting effect that gardens had on people (Davis, 1997).

In July 15, 1589, the minutes of an Amsterdam town council contained the following statement:

Whereas numerous wrongdoers, for the most part young persons, are arrested in the streets of this town daily, and whereas the attitude of the citizens is such that the juries hesitate to condemn such young persons to corporal punishment or life imprisonment, the mayors have asked whether it would not be advisable to set up a house and decree where vagabonds, wrongdoers, rogues, and the like, may be shut up and made to work for their correction (Rusche and Kirchheimer, 1997).

Early 1790's mental institutions, which housed many criminals as well as the insane, began to recognize the benefits of agriculture (Rusche and Kirchheimer, 1997). Institutions frequently included a large inmate-run farm which provided food for the staff and inmates. The therapy was largely incidental, but even at that time the work itself was viewed as beneficial to the patient. Dr. Benjamin Rush, a professor at the Institute of

Medicine and Clinical Practice in Philadelphia, Pennsylvania, as well as being distinguished as one of the signers of the Declaration of Independence and considered the first psychiatrist and father of occupational therapy, commented on the value of labor in institutions in his Medical Inquiries and Observations Upon Diseases of the Mind in 1798:

It has been remarked, that the maniacs of the male sex in all 'facilities' who assist in digging in the garden, and the females who are also employed 'in laborious practices', often recover, while persons, whose rank exempts them from performing such services, languish away their lives within the walls of the institution (Lewis, 1976).

At the time it was believed that profuse sweat carried away the diseases of the mind. So, during this time it began to be common practice for institutions working with "unstable citizens" to involve them in the art of growing and harvesting field crops.

In 1817 the first private psychiatric institution in the United States, the "Asylum for Persons Deprived of their Reason," opened in Philadelphia, and later became Friends Hospital (Lewis, 1976). It used "horticultural pleasures to awaken patients' senses and redirect their feelings... this produced an environment conducive to recovery" (Lewis, 1976). In the late 1880's this concept of reformative recovery was also adopted by the Philadelphia prison system. Using labor as a means of curing the mind became the norm in the 1800's and was documented by several leading psychiatrists of the time in various publications including, American Journal of Insanity, Hospital for the Insane, and Principles of Education for the Feeble Minded (Lewis, 1976).

One of the earliest accounts of working with juveniles dates back to 1896, in Darkness and Daylight or Lights and Shadows of New York Life, "an account of taming

little vagabonds,” describing horticultural activities at the East Side Lodging for boys (Campbell, 1896).

The best children in the school were allowed to take a plant home with them, and if they brought it back in a few months, improved and well cared for, they received others as premiums. Soon in the windows of the poorest, most tumble-down houses and tenement rookeries one saw flowers growing, or met the little savages of the district carrying a plant more carefully than they did the baby invested to their care (Campbell, 1896).

The idea of using labor as part of reform began during the evolution of the prison system. It was believed that integrity, honesty, and other like values were learned through “work” (Brockway, 1997). Poor and lower class prisoners were trained as part of a labor force for cities and towns. Horticulture and agriculture were an intricate part of this labor force training because it provided upkeep for the prison and the various offices of the warden (Rusche and Kirchheimer, 1997, Beaumont and Toqueville, 1997). Today prisoners are still involved in landscaping and maintaining the ground of various offices of the state as well as highway beautification plantings and maintenance (Rusche and Kirchheimer, 1997, Foucault, 1997).

At present, horticulture is widely used in institutions and prisons. Horticultural therapy programs have been shown to reduce aggressiveness of institutionalized adolescents (Cotton, 1975), and reduce recidivism among juvenile offenders, as seen in the Green Brigade program in San Antonio Texas (Finch, 1995). Horticultural therapy programs have been documented to increase self-esteem and locus of control for women offenders at the Federal Prison Camp (FPC) at Bryant, Texas minimum-security prison for women (Migura, et. al.1997). Joel Flagler in New Jersey has experienced similar success

by teaching horticulture in vocational education for juvenile offenders (Flagler, 1995). Catherine Sneed, a prison counselor at a San Francisco prison, has led the "Seeds of Change" Program for several years now (Rice and Remy, 1994). Many of these programs have been around for a long time, such as the Berkshire Farm Center and Services for Youth in Canaan, New York, since 1886, "helping delinquent youth make responsible choices, which will help lead them into responsible adulthood" (Boutard, 1991).

### **JUVENILE DELINQUENCY AND SOCIAL DEVIANCE**

Most youths learn deviant behavior or "acquire their deviant patterns as a result of cultural or subculture exposure and indoctrination" (Bryant, 1990). Some youngsters may enter into a pattern of delinquency, crime, and violence because 'everyone else' in their age category is doing so and one must 'go along' as a matter of survival (Bryant, 1990). If these youth are caught and convicted of a crime, they often finish their sentence at a juvenile center, and are turned back into the same neighborhood with no tools to overcome these social patterns. Once these youths acquire the label of "deviant" and "juvenile offender," it will follow them and often precede them, much like their criminal record. A negative label can stigmatize them and render them untrustworthy in the eyes of society. Once a person is labeled as deviant, other people continue to treat that individual as such, and that individual becomes categorized as being deviant (Becker, 1963). Often, a person may be trying to change his or her behavior, but he will still be viewed, or see himself as being deviant. This seemingly permanent classification leads to secondary deviance. Secondary deviance occurs when the individual commits deviant acts purely to

live up to their reputation, or is perceived to commit deviant acts because, in the eyes of society, that individual is still acting in a deviant manner, no matter what the action.

Sagarin (1990) states in his article *Deviance without Deviants: The Temporal Quality of Patterned Behavior*, that actions, not people, are deviant. He implies that all behaviors can change because patterns of behavior are temporary and people are free to conduct themselves in many ways. This theory reinforces the negative aspect of labeling. There are unfortunate consequences of placing people into categories, much like a self-fulfilling prophecy. Labeling can generate “a sense of helplessness and hopelessness”, which often surrounds people locked into certain deviant identities and may be “derived from, or fortified by, the implicit connotation that some statuses constitute essence, rather than behavior or feeling” (Sagarin, 1990).

Exiting deviance is very difficult and requires losing the label, and hence the stigma that a label can cause, and earning some form of legitimacy in society. Stigma emerges from the socially damaged relationship between society and the stigmatized individual. “In any interaction, legitimacy is a status that is claimed by an individual but must be conferred by others” (Elliot, et.al., 1990). Stigma has a disruptive influence because it suggests the inability or unwillingness of the bearer to satisfy the criteria for legitimacy (Elliot, et. al., 1990). Hence, others can feel free to question without hesitation any claims to legitimacy, and “it may be that no account can successfully substantiate this claim” (Elliot, et. al., 1990). To be viewed as “legitimate” allows one to participate fully in a social encounter because both parties are protected by “implicit social rules” which govern encounters and much of society (Elliot, et.al., 1990). One such implicit social rule: once a person has gained legitimate status, that status is not questioned without good reason. “A person

without legitimate status lies outside the boundaries of these social norms and is not entitled to their protection. As a consequence, he or she may find it exceedingly difficult, if not impossible, to realize the goals of any encounter” (Elliot, et. al., 1990). According to Elliot, Ziegler, Altman and Scott in their article *Understanding Stigma: Dimensions of Deviance and Coping*, written in 1990,

Several criteria determine the outcomes of social judgements regarding legitimacy.

Essentially, they all come down to a judgement that a person is trustworthy: Others must be able to believe that a person can and will sustain the interaction. Trust is defined as the belief that a person will fulfill social obligations, internally or externally imposed. We trust others if they do what they say they will do or what they are suppose to do.

There are some necessary prerequisites to trust, one being competence (Elliot, et. al., 1990). A person is considered competent to the extent that he/she has the requisite abilities or skills to carry out what is expected of him/her (Elliot, et. al., 1990). Once a youth is labeled a juvenile offender, this label carries the stigma of untrustworthiness and incompetence to perform within society. Being considered untrustworthy and incompetent often leads to a cycle of deviant behavior. Breaking this cycle is the challenge.

To join society may involve some degree of negotiating a new identity for labeled juvenile offenders. Building the individual’s sense of trust in himself and his own competence is the first step. Many delinquent juveniles have the disparaging view that they cannot succeed and that they are inadequate (Bulkley, 1993, Flagler, 1995). These feelings can partly be blamed on their poor performance in the classroom. Many of these youths are not engaged in their academic studies. Often they require a different teaching

style, one that is more hands-on, active, and geared to their quick active minds and shorter attention spans. A curriculum that focuses on their current needs, supplies information that they can connect to and is relevant to their present situation, and is taught in a style that minimizes distraction, will hold their attention longer. This type of teaching style fits a vocational education curriculum, which addresses basic educational components within hands on experience. A curriculum geared toward their success can be a form of rehabilitation, and will not just educate but can help them to recreate themselves. It is not enough to provide vocational and academic skills, it is also necessary to provide growth in values, beliefs, and attitudes (Migura, 1997). This combination will help the offender to function and remain within society. Within a program where these youths can gain legitimacy by being “realistically trained in a vocational area that has a high demand for a variety of labor skills,” they can renegotiate their identity from juvenile offender to potential employee in the eyes of society (Townesley, 1978).

### **HORTICULTURAL THERAPY, VOCATIONAL TRAINING, AND JUVENILE DELINQUENCY**

The average juvenile offender is either incarcerated in a county juvenile hall, where they are often exposed to more severe forms of deviant behavior from their peers, and/or released to the streets with little if any skills to succeed in their community. According to statistics obtained by the San Francisco Sheriffs’ Department, most juvenile offenders have, on average, a third grade reading level and drop out of school sometime after the sixth grade (Rice and Remy, 1994).

To stop crime, the youth at risk must be educated in ways that will meet their unique needs, and help to deter unlawful tendencies before adulthood. Hoping to decrease school dropout rates and juvenile crime, juvenile courts have long attempted to keep

young offenders in school by making graduation a part of probation (Montgomery County Public Schools, 1997).

Introducing horticulture as a vocation potentially could help these youths to obtain job preparedness and job skills, redefine themselves as no longer deviant, and help them to reconnect with their communities. Horticulture is an important tool in vocational rehabilitation (Relf, 1990). This form of therapy is designed to consider “the vocational, intellectual, physical, psychological, social, and emotional state of the youth and to treat in a coordinated manner the whole individual” (Townesley, 1978.). Horticulture Therapy is defined as a mode of treatment that involves “a defined treatment procedure that focuses on activities with specific criteria, a client with a diagnosed problem that is expected to respond to treatment, a treatment goal that can be measured and evaluated, a qualified professional to deliver treatment” (Relf, 1997). Martin Cotton at Melwood Farm explained that horticultural therapy is “the coupling of a horticultural experience with specific therapeutic or rehabilitative goals” (1975).

Horticultural programs for juvenile offenders can provide "important job training and instill regular work habits and behaviors" before these youths reach adulthood and "participants can learn to tolerate frustration and manage impulsive and negative behavioral responses," which can lead to further deviant behavior (Flagler, 1995). "As self-evaluation surveys indicate, incarcerated youths often feel that nothing they do ever turns out right," but in a horticultural program, "participants can be (and are) taught to plan, work appropriately" and succeed (Flagler, 1995).

Horticulture is increasingly becoming a part of rehabilitation in the corrections industry. According to Rice and Remy (1994), the success of programs like “The Garden

Project” operated by the San Francisco Sheriff’s Department help to substantiate the idea that socially deviant individuals need to be lead back into society in a positive way and offered the opportunity to reconnect with their community. Horticultural programs as part of correction reform introduce the delinquent individual to a way of meeting his needs in a healthy manner. Horticultural programs offer the individual a sense of belonging, derived from working with a group, and direction, drawn from group leaders. Within the corrections industry these programs also introduce the most important component, the opportunity to obtain the skills to accomplish goals, and an opportunity to participate in society in a new positive way (Rice and Remy, 1994).

Juvenile courts are beginning to see horticultural programs as a way of teaching youthful offenders, but the need to conduct research and document the effects of these programs still exists. Historically, horticulture rehabilitation-vocational training programs have proven to be successful (Nelson, 1977, Hume, 1976, Cotten, 1975, Tougas, 1978). In 1975, horticulture therapy was used to lower aggression among institutionalized offenders (Cotten, 1975). In Rhode Island, The Department of Corrections created Project Mother Earth a horticultural therapy program used to address the additional needs of Rhode Island’s incarcerated youths. This program addressed “the extreme lack of social development” among these individuals, and helped them to acquire a sense of responsibility, good work habits, and “other values necessary for access in our society” (Tougas, 1976). These programs, while preparing juvenile offenders for work in the industry, have also helped the industry to meet the needs of the communities it serves (Nelson, 1977). According to Nelson (1977), “the single most important buffer against

repeated crime” is providing a positive employment opportunity in an atmosphere of support, which is crucial.

Programs for juvenile offenders that involve horticultural training are generally not done with research in mind, and hence are usually not part of the horticulture therapy literature. Even if they are done as a research project, the positive changes that occur are hard to document. “Changes in the lives of youth brought about by participating in these programs may be difficult to define and/or measure but they are advantageous to personal growth and advancement” (Townsley, 1978).

Achievement tests have shown that under-achieving students who are taught in an interdisciplinary horticultural-based curriculum do better academically than students who are taught in a traditional education curriculum (Lohr, 1992, Sheffield, 1992). It has been demonstrated that “using a garden-based curriculum aids in meeting many of the academic requirements of the students, and offers the opportunity for students to participate, through hands-on activities, in their own learning” (DeMarco, 1997). “These (under-achieving) students improved significantly in their self-esteem from participating in the garden experience” (Sheffield, 1992).

To effectively prepare these youths for a trade, educational programs should have some link to the professional world. A few of the more successful programs have been “earn while you learn” programs, which establish a direct route to work by being a job in itself (Finch, 1995). Others teach skills which prepare the youths to apply for jobs and assist in job placement, where some form of career counseling, internships, or job placement mechanism helps to serve as follow-up and steers the program graduates toward success (Flagler, 1994, 1995, Norfolk Botanical Gardens, et. al., 1997).

The students participating in the Food From the 'Hood garden program at Crenshaw High School in South Central Los Angeles, exhibited increased self-esteem, self-confidence, pride in their accomplishments and enthusiasm according to their teachers, and self-proclaimed positive change in attitudes and feeling of self-esteem (Hutchison, 1998). Showing these youths that they can be successful, useful, and necessary in society will help them to acquire a sense of legitimacy, and reinforce acceptable behavior. The United States has a very strong work ethic and the failure to conform to our cultural expectations of individual industriousness warrants being labeled as a devalued member of society (Bryant, 1990). Almost everyone has a desire to be valued and accepted. Deviant behavior is often a counterattack against rejection. To continue to disregard these youths by labeling them as deviant and incarcerating them for being juvenile offenders does nothing to solve the root problem, and in many cases can make the problem worse (Heeren and Schichor, 1990).

### **SOCIAL BONDING THEORY**

Social bonding theory, originally proposed by Hirschi in 1969, has also been referred to as social control theory. It has been very successful in explaining delinquency among juveniles. Social bond theory or social control theory surmises that delinquency occurs as a result of an individual's deteriorating bond with society. A bond with society is defined in four parts: attachment, commitment, involvement and belief.

An individual's social bond can be a motivating force that explains conforming behavior. *Attachment* is the extent to which an individual internalizes norms, has a conscience, and feels a sense of attachment to others, in that they are sensitive to others' opinions. An individual's attachment to society determines the extent to which he/she is

bound by norms and rejects the freedom to deviate (Hirschi, 1969). *Commitment* plays a part in the social bond in that “a person invests time, energy, and himself in a certain line of activity,” like learning a trade, getting an education, or building a career (Hirschi, 1969). Because of this investment, he/she must consider the costs of deviant behavior, and the risk it poses to the gains and potential gains of his/her investment in conventional behavior. *Involvement* refers to time spent on extra-curricular activities, limiting the time and energy an individual has to engage in delinquent behavior. *Belief* plays a part in social bond because conventional society assumes or believes in the truth of a common value system from which norms are derived. Deviant individuals are in a sense committed to a different value system or one that varies in some way from that of the norm. They do not believe whole-heartily that what they are doing is ‘that wrong’, or they believe that it is justified (Hirschi, 1969).

Social bonds can and do change. Many factors can affect an individual’s bonds with society. The more an individual is forced to interact with society and experience positive social pressure, the greater chance that individual has of developing strong social bonds.

## **CHAPTER II: Description of the Research**

### **INTRODUCTION**

This research was designed to assess the effectiveness of a vocational horticulture training curriculum in strengthening a delinquent individual's bonds with society, and in evoking changes in attitudes about personal success and perceptions of personal job preparedness among a small group of juvenile offenders. To address the juvenile's bonds with society, a pretest/post test was given on the delinquent individual's attitudes toward school, teachers, peers, their opinions about themselves and personal success, and their level of appreciation for the environment. Additionally, the youths' behavior throughout the program was recorded in the school's "Daily/weekly Behavior Report," and logs were kept by service-learning students acting as mentors during this project. These written materials were reviewed to confirm and explain the test results.

To test the effectiveness in changing attitudes about personal success and job preparedness, data was collected from a pretest/post test of career attitudes and aspirations. In addition, the following data were collected to help substantiate the test results: participants' performance in, and successful completion of, the horticulture training program, either their acceptance into the prearranged internship or documented ability to acquire horticulture-related employment, and comments from the school faculty.

A comparative site participated in this study by utilizing the pretest/post test questions developed for this research project. The comparative site was a horticultural program working with four urban juvenile offenders at the Norfolk Botanical Gardens. However, it focused primarily on academic performance and horticultural instruction,

rather than on vocational skills and job acquisition. In light of this difference in program focus, initial comparisons can be made about vocational and career focused programs versus academic, instructional programs. In addition, initial comparisons can be made between this program, working with rural juvenile offenders, and studies done with urban juvenile offenders.

This study does not attempt to make broad statements about juvenile offenders because of the small number of subjects involved (6 at the AEPPS and 4 in the comparison study). This study intends to provide a profile of several youths' response to vocational horticultural training as it relates to the objectives stated above. It is exploratory in nature and provides ideas for future larger-scale research and confirms some existing trends in research with juvenile offenders.

## **METHODS AND MATERIALS**

### **The Subjects**

The juvenile offenders who participated in this research project are students at the Alternative Educational Program Project School (AEPPS). All were 14-16 year old males on probation from the juvenile court system in Montgomery County, Virginia, and expelled or suspended from their local high schools. They were a minimum of two years behind in school, and with (on the average) a fourth grade reading level and fifth grade math skills. For these offenders to complete the requirements of their probation they must either graduate from a Montgomery County high school, an Alternative Education Program Project School (AEPPS), or obtain their GED.

### **The Curriculum**

The curriculum was designed to present horticulture as a potential and attainable vocation. It was based on job descriptions provided by the Grounds Supervisor at Virginia Tech. It introduced tools, small machinery, and appropriate occupational safety associated with the profession, provided visits to professional nurseries, greenhouses, and other potential places of employment, and required completion of horticulture-related job activities. Professional horticulturists, nurserymen, and ground supervisors were brought into the classroom to discuss their professions. The curriculum was hands-on, utilizing the greenhouse at the school and the opportunity to apply learned skills. The students maintained and installed a compost demonstration garden at the local recreation center and a landscape at their school. Both of these opportunities allowed the students to work with others in a team.

The vocational horticultural curriculum was integrated in science and math and served as a complement to the English and life sciences curriculums. Communication skills developed for horticulture job interviews enhanced the English curriculum, as did resume writing, and filling out job application forms. The life skills program, which is designed to teach the students important life managing skills and resource utilization, was strengthened by including knowledge, attitudes, and job preparedness, obtained from visits to professional job sites and from visits by professionals.

### **The Training**

The horticultural course was conducted Fridays, from 9:00 am-12:00 PM. The students arrived at 8:00 am to eat breakfast, and the volunteers and mentors arrived around 8:30. After a description of the day's plans, a lecture was presented. The lectures were short, half an hour to 45 minutes long, to avoid unnecessary details or losing the interest of the students. The lecture was followed by a hands-on activity associated with the lecture topic. In Appendix 1 is a schedule of activities taught throughout the curriculum.

### **The Training Team**

The training team consisted of the researcher, AEPPS teachers, guest lecturers, mentors, and volunteers. Nine of the ten lecturers were male professionals in horticulture from the community, horticulture teachers from the university, or self-employed businessmen. One female landscape design student from the university came to explain the profession and teach the students the basics of landscape design. Each lecturer explained how he/she achieved their current career position, and served as examples of success for the youths in the program.

The project utilized a series of 12 project volunteers, but also relied heavily on the mentors, a core group of six Virginia Tech College students (five females and one male). Four of these six students were horticulture majors, and all but one of these mentors were enrolled in a Horticulture Therapy course. Because this project worked with a group of six juvenile boys at one time, the volunteers were essential for one-on-one attention. Volunteers were to ensure that the students followed safety procedures while they completed each activity and to help them complete the activities correctly. The mentors guided the youths through the activities, helping the student to consider each action in a logical manner, understanding the implications of their actions, and apply these new thinking skills to the rest of their life.

### **The Site**

This AEPPS is part of a Regional Program for Behaviorally Disordered Youths within the Montgomery and Pulaski County Public Schools. The abstract written for the 1998-99 school year describes this regional program as follows:

(This regional program) provides comprehensive therapeutic, educational and vocational services for 30-60 youths between the ages of 14 and 18, in the Montgomery and Pulaski Counties. The program is designed to provide opportunities for students to become successful in school, at home, and in the larger community by addressing their educational, vocational and personal/family concern through various intervention strategies...The Regional Program is a system consisting of the program staff and students in each of its locations. This system and its components interact with other systems, including their families, the larger school systems of Montgomery and Pulaski Counties, the juvenile justice system, etc. Most Regional Program students experience difficulties in a number of

these systems. In light of this, the program staff will work directly and collaboratively with students, their parents, and members of other relevant systems.

Classes are held from 8:30 to 1:00 PM, and the students have two teachers (one math/science and one civics/English) and an aid to provide training in living skills. They also have constant contact with the school director, who provides personal counseling on a regular basis. At the time of this program, the school consisted of a two-story house divided into three classrooms, a kitchen, two offices, a conference room, and an under-used 8x10ft greenhouse. The schoolhouse was located in a residential neighborhood behind an elementary school that provided access to other school amenities and grounds.

### **The Comparison Site**

The H.E.L.P. for Teens program at the Norfolk Botanical Gardens is an intensive supervision and horticulture job-training program. The program is a partnership between the Norfolk Botanical Gardens, the Norfolk Juvenile Court, Court Service Unit and Norfolk Division of Youth Services. The program focuses on misdemeanor offenders who are sixteen and older and who are several years behind in school. The Court Service Unit provides intensive supervision and counseling to juveniles and parents, and the Botanical Garden provides the classroom training and hands-on horticultural experiences. The program runs in three, four-month cycles. Each cycle consists of roughly eight to twelve weeks of counseling and training and three to four weeks of follow-up for four to six juveniles. The youths receive twelve hours per week of training and work experience at the Botanical Gardens, and four hours of recreational time, usually a field trip. Their work projects consist of pruning, weed control, vine removal, grounds maintenance, and planting, all in compliance with relevant child labor laws.

The goals and objectives of this program are to:

- improve the behavior, attitude, and relationships of the teens
- provide general job readiness skills, such as interviewing, filling out job applications, and enforcing dependability, punctuality, self-discipline, and safety
- provide job training skills in horticulture and landscaping, by teaching about tools, equipment and techniques, and
- develop a positive attitude about the learning process, and prepare the youths to return to school, or to obtain their GED.

An individualized plan is developed for each youth upon completion to help him/her continue to meet his/her educational or employment needs. A three to four week follow-up is conducted.

### **Data Collection**

*The Pre-Post Tests:* The youths participating in the AEPPS program and the HELP program were given the social bond pretest and the career and aspiration pretest in their classroom on the first day of the program. The same tests were administered as a post test in a non-classroom setting on the final day of the project.

#### *Social Bond Test*

The test used in this research (Tables 2-6) was designed by the researcher, based on Hirschi's tests (Hirschi, 1969) of social bond for juvenile delinquency. The social bond test focused on school, teachers, peers, opinions, and environmental attitudes. These five categories were chosen because the curriculum was designed to address these issues.

Section I on *school* dealt with the youths, opinions and attitudes about school. Because this was a school for students who were barred from the public school system, more emphasis was placed on what the youths viewed the function of school to be, as opposed to what their experience in school had been. For example, “How important do you think what you learn in school is to getting a job?” This section also touched on the issue of commitment, because the better a student does in school, the more committed he/she is to it, and the less delinquent acts he/she will feel compelled to commit.

Section II on *teachers* dealt with the issue of respect for teachers as figures of authority, as well as an attachment to teachers in general. This general information can be used to understand how these youth perceive authority figures as a whole and how much they respect that authority. For example, “Do you care what teachers think of you?” and “Would you like to be the kind of person your teachers are?”

Section III on *peers* addressed the issue of how affected the youths in this study are by their peers. For example, “How much influence do your friends have on your decisions?” and “Do you care what your friends think of you?” or “Would you like to be the kind of person your friends are?” Under the assumption that because these youth are juvenile offenders most of their peers are considered “unconventional” and hence perpetuate the desire to be delinquent, this information can determine to what degree these youths are attached to this destructive peer group.

Section IV on *opinions* dealt with their view of themselves and their view of their potential for success. “Do you agree with the statement, ‘What is going to happen to me will happen, no matter what I do.’” and “Do you agree with the statement, ‘On a whole, I’m satisfied with myself.’” The results drawn from this section can indicate how much

the youth “believes in himself” and is committed to his personal success, and how much he values his own achievement over his position within his peer group.

Section V on *environmental attitudes* was developed by the researcher after reviewing other similar tests developed by Joel Flagler (1995) for his work with “at risk” youth, and Drs. Zajicek and Campbell (1997), for their work determining environmental attitudes of high school students. This section inquired about their views on responsibility for the environment, and addressed the issue of vandalism, as vandalism is part of delinquent behavior. Some of the questions from this section were; “Do you agree with the statement, ‘It’s okay sometimes to mark up, break or destroy property’” and “Do you agree with the statement ‘You should try to make your community a better place.’”

Each question on this test required that one of two answers be selected. The sections were kept short to gain the most truthful answers rather than the answers the students thought the researcher wanted. There were five questions in each section, with the exception of the environmental attitudes, which had fourteen. This seemed justified because the program was designed to teach horticulture.

#### *Career and Aspirations Test*

The second test focused exclusively on career and aspirations. This test was also one of Hirschi’s tests, but some of the questions were adapted for the purposes of this study. There were 24 questions on this test, and most dealt with descriptions of work environments. For example, “Do you agree with the statement: ‘I should be able to keep clean at work?’” and ‘I would like to work outside.’” The remaining questions dealt with how worried they were about finding work, being qualified for work, being able to do the kind of work they wanted, and how often they thought of their future and career

aspirations. The last question asked them to use three ratings of work enjoyment to rank several jobs (e.g. landscaper, contractor, lawyer, and carpenter) as to how much they would like that kind of work.

***Behavior Charts:*** The behavioral charts at the AEPPS monitored each youth's attendance and recorded the following observed behaviors:

- exhibits appropriate disposition towards staff and students
- remains focused and shows interest in learning
- completes assigned tasks, constructive attitude
- refrains from distracting others and seeking attention
- respectful of buildings, grounds, and equipment.

The semester before the project began, this information was collected by the AEPPS teachers. The semester of the research project, this information was collected by the mentors. Scores range from zero to four, with four being the best, and any score under four needing improvement. This information was used to clarify and interpret the test results.

***Internship:*** The juvenile offenders at the AEPPS were given the opportunity to apply for two summer internship positions in grounds maintenance with the municipality. Thus, the final indicator of impact of the curriculum was based on each student's quality of internship interview, and on either the student's successful acceptance to the internship or success in securing other horticultural employment for the summer. The acceptance into the summer internship positions was determined by resume completed as part of the training, interviews for the internship position, and performance in the semester-long program. The students submitted their resumes to and were interviewed in the municipal

office by a four-person team, consisting of the town horticulturist, a personnel representative, and other municipal employees. The interviewers were not obligated to hire any of the students.

***Mentors logs:*** The service-learning students who participated as mentors in this project kept logs of their interactions with the youths. These logs contained a description of each day's activities, the mentors' impressions of how successful that activity was at conveying the lesson, and their views on the research project as a whole. These were read and reviewed as comparative data to the pre-post tests results.

***Follow-up interviews:*** Follow-up interviews were conducted with the teachers and five of the students the semester after the research project. The one student who was not interviewed no longer went to the AEPPS and was unable to be contacted, but information was supplied about that student. These interviews were verbal, informal, and conducted at the AEPPS. The teachers were asked how they thought the students' work experiences affected the students, if this project had been constructive for the students, and if they were including horticultural information in their curriculum this year.

The students were asked if they obtained summer employment in horticulture, if their work experience was successful, meaning:

- they retained the job for the entire summer
- in their opinion the employer would hire them back
- they enjoyed the experience
- if they would work at that job or a similar job again.

The students who earned the internship were asked the same questions regarding their experience, and the internship coordinator was also contacted to discuss her impression of the students.

### **Analysis Procedures**

*Pre-Post Test:* The tests were scored to indicate how strong the bonds with society were for each individual. Since the test questions for this project only had two possible answers, ones (stronger social bond answers) and zeros (weaker social bond answers) were used for analysis. At no point during the test analysis did it appear that changes in results were due to only one youth. The test results were analyzed using Hirschi's analysis of the responses (1969). A paired t-test was used to compare the pre and post test scores ( $\alpha=0.05$ ) for each site. An ANOVA ( $\alpha=0.05$ ) was used to do the overall comparisons between urban and rural sites.

The career and aspirations pre and post tests were tallied and compared. At no point during the comparison of these test results did it appear that shifts were due to only one youth. The last question on this test required the students to rate various jobs. The answers for this question were tallied and weighted, then each rating was assigned a numerical score (the tally for "most liked" was multiplied by 2, the tally for "liked" was multiplied by 1, and the tally for disliked was multiplied by -1). These scores were then added together, generating a total numerical score for each job type. These total job scores were compiled for both the pre and post test, then comparisons were made.

Because of the small size of the group attending the school (6 students), no comparable control group could be formed, but a similar program was conducted at the Norfolk Botanical Gardens concurrently and was used as a comparison. The Norfolk

program worked with small consecutive groups of juveniles. Group one, consisting of four youth was used for comparison to this study. The same tests and analysis were used for the study done in Norfolk.

***The Behavior Charts:*** The charts were analyzed for Fridays only, since the research project was held on Fridays. Comparisons were made the semester before the research program began to the semester that the research program was conducted.

***The Internship:*** The acceptance to the internship positions was determined by each student's resume and interview. In addition, recommendations were provided by the research team, based on each student's performance in the semester-long program. The student's interviews were evaluated the same as all other interviews conducted by the municipality for these positions on the basis of professionalism, quality of answers, and basic grounds maintenance knowledge.

***Mentors' logs and follow-up interviews:*** The mentors' logs were read and used to interpret and clarify the test results and trends indicator throughout the course of the study. They were also analyzed for consistency of comments and themes with regard to the project as well as the youths' views and behaviors.

The student/teacher follow-up interviews were taken into account when considering the results for this project and recommendations for future horticulture projects.

## CHAPTER III: The Test Results and Discussion

### COMPARISONS BETWEEN THE SOCIAL BOND PRETEST AND POST- TEST RESULTS FROM THE ALTERNATIVE EDUCATION PROGRAM PROJECT SCHOOL

The test results from the students at the AEPPS show that each student's social bond test score either improved or stayed the same with a significant increase of mean scores for the group, using a Paired T Test (Table 1).

**Table 1.: The Alternative Education Program Project School social bond pre and post test summary for An Assessment of a Vocational Horticulture Training Curriculum for Juvenile Offenders.**

n=6	Mean	Standard Error	Median	Range out of 35	
				High	Low
pretest	23.2*	1.35	22.5	29	19
post test	25.3*	1.23	24.5	29	22

\*P=.05

Results for the pre and post test may have been influenced by the difference in their administration. The pretest was given in a formal classroom setting and the post test in a relaxed atmosphere. The change in testing venue was recommended by Dr. Donald Shoemaker (a well respected researcher in the field of juvenile delinquency, and a Sociology Professor at Virginia Polytechnic Institute and State University, and a faculty research consultant for this project), to address the dilemma that the social bond pretest results for the environmental section, when compared to the mentor logs, appeared to be influenced by the classroom setting. Shoemaker advised that, in pretest/post test type studies, students often attempt to find what they believed the researcher would count as the "right and wrong answers." He recommended that the post test be administered in a more relaxed setting, but still within the context of the horticultural program. He noted that this may skew the results of the post test during analysis, but such skew can be

tolerated for interpretation purposes when faced with acquiring data that would otherwise be deemed irrelevant. This project had the unique opportunity to acquire a great deal of individualized data because of the small size of the study. As a result, much of the analysis for the study was based on the numerous, individualized observations conducted and the corresponding interpretations of the test results. Accordingly, the second round of testing, the post test, was given on one of the project sites to elicit more truthful responses, especially for the environmental section. When the post test was analyzed, the youths' answers appeared to be more honest in this section, as reflected in the mentors' logs.

Another possible factor in the change in response could be that the students now knew the training team and understood what they were trying to accomplish with this project. At the initial meeting and administration of the pretest, the students appeared intimidated by the research team and by being a "subject" in a research study. Several times during the pretest, they expressed uneasiness about being "studied." Several comments were overheard; "I don't want to be studied!", "I don't want someone to know what I think", and "Why did we have to take that test, what are you going to do with it?" Once the project actually began, the students could see they were going to get something out of it. They stopped seeing the researcher and the research project, and started to see a teacher and a class in horticulture. The volunteers were no longer perceived as observing them, but rather helping them learn, thus they felt less like a research "subject." The test results do indicate some progress toward greater social bonds, and the observations logged by the mentors seem to reflect a great deal more social bonding occurring than the tests indicate. The test results may have reflected how much the students trusted or didn't

trust the research team, but trust can be interpreted as part of the foundation for a strong social bond, which would indicate an impact by the curriculum to facilitate social bonding.

The positive shifts are probably not entirely due to the introduction of a vocational horticulture training program at the AEPPS. The students' positive feelings could also be influenced by their special school arrangement, and could be directed more towards the unique school staff and half days, rather than the introduction of the vocational horticultural program. However, most of the youth have attended this school for more than two years prior to this project. There are variables in this study that could not be controlled, like the school and the staff and the increased interest in learning as the school year progresses. The only new variable introduced and studied by this research project was the introduction of the vocational horticulture curriculum.

#### **DISCUSSION OF SOCIAL BOND PRE AND POST TEST RESULTS FOR SECTION I.**

When the pretest results were compared to the post test results from section one, school (Table 2.), there was an evident increase in positive attitudes. Three of the four questions indicate that the youth were strengthening their attachment to school and were more committed to their education, which are indicators of social bond. In addition, there was a shift of 54% positive answers to 75% positive answers.

According to Hirschi, the students' attitude toward school and subsequent bond can be effected by their perceived academic ability (1969). Students who perform poorly in school are more likely to commit delinquent acts, and a youth's bond with school is the link between ability and performance, and delinquency (Hirschi, 1969). In cases of self-reported delinquency by individuals who admit to chronic deviant behaviors on surveys or in interviews conducted for research purposes, there is a correlation between academic

ability and delinquency (Hirschi, 1969). It has been argued that a dislike for school among young males is often a motivation for delinquency (Hirschi, 1969). From this opinion, grew the “frustration hypothesis,” which Hirschi explains as when an individual no longer desires success because of continued failure associated with school (1969). As a result “an indifference towards school becomes the hallmark of the delinquent” (Hirschi, 1969).

In the case with the students at the AEPPS, the horticulture program was a “class” for which they earned science credit and in which they did well. This new-found success, coupled with any success that they were already achieving in the course of the school year, generated a positive attitude about their school, which would translate into a strengthening bond. In addition, the vocational horticulture curriculum culminated in internship positions which were based on what they learned in these horticulture classes. This curriculum introduced a more practical side of education, providing an obvious link to a job and a career. This concept was not lost on these youth, because attendance records and mentors logs indicate that the students seemed to respond positively to the horticulture program. Attendance improved and mentors recorded several comments from the students implying that they liked learning “this stuff”, referring to the vocational horticulture information.

**Table 2. Social Bond Pre and Post- Test Score Results for both the Alternative Education Program Project School (AEPPS) and The Norfolk Botanical Gardens H.E.L.P program for An Assessment of a Vocational Horticulture Training Curriculum for Juvenile Offenders.**

<b>Section I: SCHOOL</b>	<b>Pre AEPPS</b>	<b>Post AEPPS</b>	<b>Pre HELP</b>	<b>Post HELP</b>
1) In general, do you like or dislike school? A. Like it B. Dislike it	2 4	4 2	1 3	2 2
2) How important do you think what you learn in school is to getting a job? A. A lot B. A little	3 3	3 3	1 3	4 0
3) How important do you think grades are for getting the kind of job you want when you finish school? A. Important B. Unimportant	4 2	6 0	3 1	4 0
4) Do you agree with the statement, "The things I do in school seem worthwhile and meaningful to me." A. Agree B. Disagree	4 2	5 1	0 4	2 2
Total positive/Total negatives	13/11	18/6	5/11	12/4

## **DISCUSSION OF SOCIAL BOND PRE AND POST TEST RESULTS FOR SECTION II.**

When the pre and post test results were compared for section two, teachers (Table 3.), they shifted to a more positive attitude on four of the five questions, 53% positive to 83% positive. This positive shift in attitudes towards teachers could also be explained by Hirschi's theory stated above in the discussion from section one. The way an individual perceives his/her performance in school, regardless of actual ability, will determine his/her attitude toward the institution of school, and hence the teachers within (Hirschi, 1969). The ability to relate to the teachers within the institution of school is a way of perceiving value in authority and belief in the conventional value system where authority is regarded and observed.

The "frustration hypothesis," plays a part in another theory, according to Hirschi (1969), having to do with why a student's perception of his teachers is important. When a male student claims not to care what his teachers think of him when he really does care creates a "reaction formation." He has "converted real concern into apparent lack of concern," thus generating an "intense frustration" which "consequently motivates him toward delinquent patterns of behavior in an attempt to recoup his loss of self esteem."

In the case of the youth at the AEPPS, the introduction of new "teachers" as mentors, as well as a new curriculum, which casts their existing teachers' as learners as well, created an atmosphere where the students could break down their negative notions of authority. According to the mentor logs and the teachers responses (Appendix 3-5), there were many opportunities for the youth to discuss some of these difficult issues with the mentors and the teachers, hence relieving some of these frustrations.

**Table 3. Social Bond Pre and Post Test Score Results for both the Alternative Education Program Project School (AEPPS) and The Norfolk Botanical Gardens H.E.L.P program for An Assessment of a Vocational Horticulture Training Curriculum for Juvenile Offenders.**

SECTION II: TEACHERS	PRE	POST	PRE	POST
	AEPPS	AEPPS	HELP	HELP
5) Do you care what teachers think of you? A. I care a lot B. I don't care much	2 4	5 1	0 4	1 3
6) Do you agree with the statement, "Most teachers enjoy teaching." A. Agree B. Disagree	6 0	5 1	0 3*	1 3
7) Do you agree with the statement, "Teachers teach me information that is relevant to my life." A. Agree B. Disagree	5 1	6 0	2 2	2 2
8) Do you agree with the statement, "I share my thoughts and feelings with my teachers." A. Agree B. Disagree	2 4	5 1	1 3	1 3
9) Would you like to be the kind of person your teachers are? A. Yes B. No	1 5	4 2	0 4	0 4
Total positive/Total negative	16/14	25/5	3/16	5/15

\* student left question blank

### **DISCUSSION OF SOCIAL BOND PRE AND POST TEST RESULTS FOR SECTION III.**

Section three (Table 4.) of the test deals with peers and is a little different than the other sections. Attachment, or strong bonds to peers, can be a good or a bad thing depending on the peers. “If the peer ‘culture’ requires delinquent behavior, then presumably attachment would foster conformity-that is delinquency” (Hirschi, 1969). If the reverse is true and the peer culture mimics conventional society, then an attachment to peers would “foster conformity to conventional standards” (Hirschi, 1969). So, the interpretation of the results on this section requires an understanding of the peer culture.

At the AEPPS, all the boys that attend have had encounters with the legal system and are therefore delinquent youth. The peer culture, in this instance, could be considered one that fosters delinquency. The first question in the peer section asks the youth to characterize their friends as either persons who respect other people, or not. This question is followed by others that help create a picture of how attached the youth is to these peers. It has been reported that in cases of rural juvenile offenders, attachment to peers is strong, and that rural youth have a stronger social bond than urban youth (Hindelang 1973, Lysterly and Skipper 1981). Normally the rural youth would be less inclined to commit deviant acts, but if the rural youth is already a delinquent and has this stronger bond with other unconventional peers, then this strong bond can add to the youth’s inclination to commit delinquent acts (Hindelang 1973, Lysterly and Skipper 1981). In some instances, youth view delinquency as “an instrument of social mobility,” where delinquents and their behaviors are held in high esteem rather than “condemned for their nonconformist antics” (Bryant, 1990). Bryant states that, in the long run, “juvenile

delinquency is dysfunctional for both the individual offender and for society” (Bryant, 1990).

In addition to the reasons stated above, a strong peer bond among delinquent youth can also be detrimental to other aspects of their social bond. According to Hirschi, when a youth is “strongly attached to his peers, he neglects personal success...the emphasis is on primary-group solidarity and loyalty,” and not “on personal advancement” (1969).

In light of this theory on peer attachment, section three is somewhat positive. Most of the answers indicated that generally there was a weak peer attachment among the youth at this school, but there were also some inconsistencies between questions 12-14 on both the pre and post test results. The observations logged by the mentors indicate that there were obvious peer group ‘leaders’ who greatly influenced the actions of the youth in the group. This would indicate that the peer attachment is strong among the youth in this study.

There was a 50% to 57% shift towards a greater peer bond when pre and post test answers were compared. This could reflect that the youth were more honest about their peer attachments on the post test or, this could indicate that the youth were developing a stronger peer bond as the year progressed. Another possible interpretation is that the youth were developing peer bonds with the mentors, which according to Hirschi’s theories, would be a positive attachment toward conventional peers.

**Table 4. Social Bond Pre and Post Test Score Results for both the Alternative Education Program Project School (AEPPS) and The Norfolk Botanical Gardens H.E.L.P program for An Assessment of a Vocational Horticulture Training Curriculum for Juvenile Offenders.**

SECTION III: PEERS	PRE	POST	PRE	POST
	AEPPS	AEPPS	HELP	HELP
10) Do you agree with the statement, "My friends respect other people." A. Agree B. Disagree	5 1	5 1	2 2	2 2
11) Would you like to be the kind of person your friends are? A. Yes B. No	2 4	2* 3	0 4	0 4
12) Do you care what your friends think of you? A. Yes B. No	3 3	4 2	0 4	1 3
13) Do you agree with the statement, "I share my thoughts and feelings with my friends." A. Agree B. Disagree	4 2	5 1	2 2	2 2
14) How much influence do your friends have on your decisions? A. A lot B. A little	1 5	1 5	0 4	0 4
Total positive/Total negative	15/15	17/12	4/16	5/15

\* student left question blank

#### **DISCUSSION OF SOCIAL BOND PRE AND POST TEST RESULTS FOR SECTION IV.**

The “Opinion” section on the test (Table 5.) says a great deal about the youth in this study. There was a 74% to 80% shift in positive answers on this section. Half of the students agreed with the statement, “What is going to happen to me will happen, no matter what I do,” on both the pre and post test. This indicates that some of the youth at the AEPPS desire to free themselves of the responsibility for their actions. With this attitude towards self-determination these youth create a “‘billiard ball’ conception of themselves in which they see themselves as helplessly propelled into new situations,” and “the delinquent acts are due to forces outside of themselves and beyond their control” (Hirschi, 1969). At the same time, five out of the six agreed that success is up to the individual. This would imply that in most cases at the school, the youths are willing to accept the consequences of their actions, at least the positive consequences.

Four out of the six agreed that they would rather not start something at which they may not be successful. This indicates a lack of desire for challenge and a possible fear of failure. This could be due to the fact that to this point in their lives they have experienced a great deal of failure, or what is perceived as failure, especially in school. This could relate to Hirschi’s theories on school attachment and belief in performance discussed in Section I.

Only one student disagreed with the statement, “On a whole, I’m satisfied with myself.” This result can be viewed as both positive and negative. On one hand for a delinquent individual to claim satisfaction with himself implies that he has no impetus to change his deviant views or behaviors. On the other hand, for an adolescent to claim satisfaction with himself indicates a level of self-esteem that would immune him from peer

views and hence lower his possible attachment to other unconventional and delinquent youths. For a conventional, non delinquent youth, or a delinquent youth that has reformed his value structure, this is positive, but for delinquent youths this is not necessarily an outcome that indicates a desire to adopt conventional norms.

**Table 5. Social Bond Pre and Post Test Score Results for both the Alternative Education Program Project School (AEPPS) and The Norfolk Botanical Gardens H.E.L.P program for An Assessment of a Vocational Horticulture Training Curriculum for Juvenile Offenders.**

SECTION IV: OPINIONS	PRE	POST	PRE	POST
	AEPPS	AEPPS	HELP	HELP
15) Do you agree with the statement, "What is going to happen to me will happen, no matter what I do." A. Agree B. Disagree	3 3	3 3	1 3	2 2
16) Do you agree with the statement, "I would rather not start something at which I may not be successful." A. Agree B. Disagree	4 2	2 4	1 3	1 3
17) Do you agree with the statement, "I should not expect too much out of life." A. Agree B. Disagree	1 5	0 6	1 3	1 3
18) Do you agree with the statement, "I do not have much to be proud of." A. Agree B. Disagree	0 6	1 5	1 3	1 3
19) Do you agree with the statement, "On a whole, I am satisfied with myself." A. Agree B. Disagree	5 1	6 0	2 2	2 2
20) Do you agree with the statement, "Success is up to the individual." A. Agree B. Disagree	5 1	5 1	4 0	4 0
Total positive/Total negative	10/26	7/29	6/18	7/17

\*student left question blank

## **DISCUSSION OF SOCIAL BOND PRE AND POST TEST RESULTS FOR SECTION V.**

A majority of the students, in the section on “Environmental Attitudes,” appear to have answered the pretest with what they believed the “correct” answer to be by choosing the most environmental answer (Table 6.). This could be due to the fact that this is something that has been introduced in their regular science curriculum, and through media and discussion, “right” and “wrong” answers have been “taught.” Therefore, they decided what the “right” or expected answers were and answered appropriately, not necessarily truthfully. Yet, the observations logged by the mentors through the course of the program indicate that the students’ actions prove that they believe otherwise. The mentors noted such things as littering and mindless plant destruction, and walking through plantings and eroded areas. There is evidence through prior studies, that this trend is the case with most of the general public (McEvoy, 1972, Dillman and Christenson, 1972). This could be because the test was taken in a classroom setting and that is the objective when taking a test for any other class. Of course, this also indicates that they are very much influenced by the perception that others might have of them, and less interested in their own perceptions of themselves, which is consistent with the observations noted by the mentors (Hindelang 1973, Lyerly and Skipper 1981).

Even though the students answered the pretest the way that they did, there were changes in the results of the second round of testing. The test results showed that there was a slight positive environmental attitude shift from the time the students took the pretest to the time of the post test (Table 6.). This positive shift was seen in five of the 14 questions and a negative shift on three, a total of 80% to 87% positive shift. This change in results could also be interpreted as the students giving the “right” answer again, but the

mentor's observation logs also support that some of these answers were truly how the students felt. Several of the mentors wrote about witnessing the boys reprimanding each other for walking through flowerbeds and making a point to walk around landscape plantings. After the landscape at the Compost Demonstration Garden was installed, several of the boys could be heard making threats to anyone that "messed" with their plants.

Two comparisons between the pre and post test that demonstrate the youths' willingness to express negative environmental opinions are: one, when asked if they agreed it was okay to park your car on the grass, there was a shift from two to three agreeing, and two, a shift from no one believing that "people who live in the country don't have to be environmental", to two believing. Both of these were issues discussed in the course of the program, but possibly because of the rural environments in which these boys have grown up, some of their views disagree with the ideas presented to them, and their previously stated answers to these questions.

**Table 6. Social Bond Pre and Post Test Score Results for both the Alternative Education Program Project School (AEPPS) and The Norfolk Botanical Gardens H.E.L.P program for An Assessment of a Vocational Horticulture Training Curriculum for Juvenile Offenders.**

<b>SECTION V: ENVIRONMENTAL</b>	<b>PRE</b>	<b>POST</b>	<b>PRE</b>	<b>POST</b>
<b>ATTITUDES</b>	<b>AEPPS</b>	<b>AEPPS</b>	<b>HELP</b>	<b>HELP</b>
21) Do you agree with the statement, "It's okay sometimes to mark up, break or destroy property." A. Agree B. Disagree	2 4	0 6	0 4	0 4
22) Do you agree with the statement, "It's okay sometimes to step on, trample, pull up or destroy plants." A. Agree B. Disagree	1 5	1 5	0 4	0 4
23) Do you agree with the statement, "You should try to make your community a better place." A. Agree B. Disagree	5 1	6 0	4 0	4 0
24) Do you agree with the statement, "All bugs are bad." A. Agree B. Disagree	0 6	0 6	0 4	0 4
25) Do you agree with the statement, "It is all right to litter if you don't get caught." A. Agree B. Disagree	0 6	0 6	0 4	0 4
26) Do you agree with the statement, "Environmental issues only affect people who live in the city". A. Agree B. Disagree	1 5	0 6	0 4	0 4
27) Do you agree with the statement, "It's okay to pollute as long as you are on your own land." A. Agree B. Disagree	0 6	0 6	1 3	1 3
28) Do you agree with the statement, "Everyone should try to recycle as much as they can."				

A. Agree	6	5	4	4
B. Disagree	0	1	0	0
29) Do you agree with the statement, “People should protect animals and plants.”				
A. Agree	6	6	4	4
B. Disagree	0	0	0	0
30) Do you agree with the statement, “You shouldn’t park your car on the grass.”				
A. Agree	2	3	3	3
B. Disagree	4	3	1	1
31) Do you agree with the statement, “Food scraps and yard waste can be recycled instead of thrown away.”				
A. Agree	6	6	4	4
B. Disagree	0	0	0	0
32) Do you agree with the statement, “Working with plants or being around plants has always been a part of my life.”				
A. Agree	2	3	3	3
B. Disagree	4	3	1	1
33) Do you agree with the statement, “People who live in the country don’t have to be environmental.”				
A. Agree	0	2	1	0
B. Disagree	6	4	3	4
34) Do you agree with the statement, “ People in this community think plants are important.”				
A. Agree	2	4	2	3
B. Disagree	4	2	2	1
Total positive/Total negative	17/67	12/72	6/50	4/52

**COMPARISONS BETWEEN THE SOCIAL BOND TEST RESULTS FROM THE ALTERNATIVE EDUCATION PROGRAM PROJECT SCHOOL (AEPPS ) AND THE H.E.L.P. FOR TEENS PROGRAM**

The rural students at the AEPPS as a whole appear to have a stronger bond with society, which is consistent with social bond research (Hirschi, 1969, Lyerly and Skipper, 1981, Gardner and Shoemaker, 1989) (Table 7.). This fact is not confirmed statistically using ANOVA ( $F = 1.43, p = 0.27$ ), in the current study (which may be caused by the low sample number) but it is reflected in the relative mean scores on the social bond test (Table 7.). All the youths showed a strengthening in social bond as a result of this program.

**Table 7.:** A Comparison of Social bond test score summaries for An Assessment of A Horticultural Training Curriculum for Juvenile Offenders. The HELP for teens program represents an urban area and the Alternative Education Program Project School (AEPPS) represents a rural area.

urban, n= 4 rural, n=6	Mean	Standard Error	Median	Range	
				High	Low
<b>pretest urban</b>	20.0	2.27	21.0	24	14
<b>post test urban</b>	23.5	2.78	22.5	31	18
<b>pretest rural</b>	23.2*	1.35	22.5	29	19
<b>post test rural</b>	25.3*	1.23	24.5	29	22

\*P= 0.05

Research into rates of rural-urban delinquency indicates that rural areas do, on a whole, have lower rates of delinquency than do urban areas (Lyerly and Skipper, 1981, Gardner and Shoemaker, 1989). There is also a discussion in this area of research that deals with an interesting situation that occurs with rural youth. Normally, having strong bonds with peers indicates a stronger bond with society, and hence lowers an individual's inclination to commit delinquent acts (Lyerly and Skipper, 1981, Gardner and Shoemaker, 1989). But, in certain cases, mostly found with rural youth, the stronger the bond with peers, the more inclined the youth is to commit delinquent acts, and this is not necessarily the case with urban youth (Lyerly and Skipper, 1981, Gardner and Shoemaker, 1989).

The research in this area is supported by the trends seen with these test results among these two groups of juvenile offenders (Table 4.).

#### **PRE AND POST “CAREERS AND ASPIRATIONS” TEST RESULTS AND DISCUSSION**

The “Career and Aspirations” test was designed to measure attitudes about personal success and individual perceptions of personal job preparedness among the youth participating in the study. The results from this test (Table 8.) indicate that changes in these attitudes did occur for the youth at the AEPPS and are supported by the mentor’s logs.

The Norfolk Botanical Gardens program was more educationally focused than vocational, and focused more on encompassing Virginia’s SOL’s, and less on job skills. This may be reflected in the fact that there was little change in the students’ career aspirations, and because of this, only minor analysis was done on their test results. The HELP youths’ test results are included in this discussion as a baseline for comparison of rural versus urban views and for comparison of effect of program focus on post test results.

From the pretest to the post test, there appeared to be an overall positive change in the youths’ views at the AEPPS on education, and specifically in the level of education that the participants wanted to finish. The responses to the questions “how much schooling would you like to get,” and “ how much schooling do you expect to get” both showed an over all increase in the level of difficulty they desired to complete. One marked change was in desire versus expectations. Pretest they expected to complete less than desired but in the post test their expectations were the same or equal to their desired level. According to Hirschi, this would indicate a great change in these youths’ social

bond. An adolescent's view of his expected level of education hints at how much that youth has internalized the cultural goals of success and aspirations (1969). The youths in the HELP program generally desired a greater level of education than did the AEPPS youth, but from pre to post test, two of the youth shifted their desire to a lower level of education (Table 8.). Their expectations remained constant.

There was a shift from half to a third of the students at the AEPPS who said that the job they would like to get requires more education than they planned on getting (Table 8, question 22), but only one student was very worried about deciding whether or not to go to college (Table 8, question 14). According to Hirschi's Social Bond theory, the greater the youth's attachment to education, the less likely a youth is to commit deviant acts. Although high aspirations are desirable, unrealistic aspirations are equally as dangerous as weak aspirations (Hirschi, 1969).

Some of the mentors logged observations in the beginning that the youth in this study tended to feel that they were entitled to instant gratification (Appendix 3). According to the logs the students expressed a belief that somehow by deferring gratification they would miss out on something and not gain anything in return. The logs point out that some of the students often spoke of wasting time in school, and how much money they could be making at their part-time jobs instead of being in class. These observations are consistent with research in this area (Hirschi, 1969). Social bond theory suggests that you must invest in something as part of establishing social bonds.

Questions three through ten inquired about their views on jobs and work. In questions five and seven, regarding various job descriptions, there were one and two point shifts, indicating that the students at the AEPPS have reconsidered these issues. From

pretest to post test there was a shift from four to all six participants who disagreed with the statement “the only reason to have a job is for the money,” indicating a greater valuing of job and work for personal satisfaction. According to Hirschi, a desire of wealth over job and job preference, can be a measure of delinquency. With this in mind, the rural youths desire for money over job preference decreased and the urban youths desire for wealth stayed the same from pre to post test, half agreeing and half disagreeing with the statement.

For the most part questions 11-19 (Table 8.) addressed their thoughts and fears about their future, with regard to employment and employability. These questions dealt with how prepared they feel for the working world. There were two point shifts in questions regarding worries about what kind of jobs to get and how to find these jobs after high school. Over all, the level of anxiety over career and career choices increased from 35% expressing worry to 40% of the responses expressing worry over the course of the program. This indicates that more of the youth are now thinking about careers and career choices.

According to Hirschi, the ideal situation for the non-college bound youth is that he/she finishes school and begins his/her occupational career. Thus, “he is continuously bound to conformity by participating in a conventional game” (Hirschi, 1969). Hirschi goes on to explain though, that due to age requirements, either stated or understood, on most occupations, many adolescents complete their education without this smooth transition into a chosen job. Hirschi dubs this career world the “adult status” and the educational realm the “child status.”

Being no longer tied to an educational career, they become in one sense adults; yet, being free of an occupation, they remain in one sense children...the adolescent caught in this situation tends to develop attitudes and behave in ways 'appropriate' only to an adult; his structural position at the same time guarantees him the freedom appropriate only to a child. The consequence is a high rate of delinquency (Hirschi, 1969).

At the time of the pretest, the urban youth in Norfolk had a higher level of anxiety about careers and career choices than did the rural youth and like the AEPPS youth, the HELP youths anxiety level increased from the pre to the post test. A long range program with more resources could help both of these groups to develop goals and solidify their future plans even more than was addressed in the curriculum designed for the AEPPS youth, hence, alleviating some of the fears expressed about finding work.

Questions 20 and 21 asked the youth if they were aiming for a particular kind of job when they finished school, and if they knew anyone with that job. On the pretest, four the AEPPS students indicated that they were aiming for a certain job and that they did know someone with that kind of job. In addition, they were confident that they would have sufficient education for that job (question 23, Table 8.). However, the post test answers are inconsistent. More youth indicated on question 21 that they knew someone with the kind of job that they wanted, then indicated on question 20 that they had a particular job in mind. This may indicate a recognition of more job opportunities than previously believed possible.

At the end of the test was a list of careers. The students were asked to rate each career based on how much they would enjoy the work. Of the 18 careers given, from pre to post test, 13 reduced in ratings and five increased. The ratings for the rural youth in the

AEPPS program increased in four of the five career areas relating directly to working with plants; forester, landscaper, owner of farm, ranch or nursery, and landscape maintenance. This shift may reflect the exposure to new opportunities, or the desire to please the researcher and the mentors, which would also indicate positive social bonding. The career ratings for the urban youth indicated increases in desire to work as teachers and landscapers and a decrease for construction worker and carpenter. This may be a reflection of the two jobs that were modeled for them in their program, where as the AEPPS were exposed to a wider breadth of the horticultural industry.

At the end of this test there was a space provided for them to write down the careers that they had decided they might want to have when they finish school. On the pre test only three students responded. Their responses were jet pilot, US Marine Corp Drill Sergeant, and mechanic. In the space provided at the end of the post test only one student did so. His career choice was to be a US Marine Corp Drill Sergeant. Only one answer was written in by the urban youth on the pre test, producer rapper, and no answers were written in on the post test.

**Table 8. “Careers and Aspirations” at the Alternative Education Program Project School (AEPPS) and The Norfolk Botanical Gardens H.E.L.P program for An Assessment of a Vocational Horticulture Training Curriculum for Juvenile Offenders.**

<b>TEST 2: CAREER AND ASPIRATIONS</b>	<b>AEPPS pretest</b>	<b>AEPPS post test</b>	<b>HELP pre test</b>	<b>HELP post test</b>
<b>1) As you see it now, how much schooling would you like to get eventually?</b>				
<b>A. Some high school</b>	2	0	0	0
<b>B. High school graduation</b>	2	3	0	1
<b>C. On the job training</b>	0	1	0	0
<b>D. Trade or business</b>	0	0	3	2
<b>E. Some college, junior college or community college</b>	1	0		
<b>F. College graduation (four years)</b>	1	1	0	1
<b>G. More</b>	0	1	1	0
<b>2) From the previous question how much schooling do you expect to get eventually?</b>				
<b>A. Some high school</b>	2	0	1	1
<b>B. High school graduation</b>	3	2	0	0
<b>C. On the job training</b>	0	2	0	0
<b>D. Trade or business</b>	0	0	2	2
<b>E. Some college, junior college or community college</b>	0	0	0	0
<b>F. College graduation (four years)</b>	1	1	1	1
<b>G. More</b>	0	1	0	0
<b>3) Do you agree with the statement, “My job should allow me to work with my hands?”</b>				
<b>A. Agree</b>	6	6	4	4
<b>B. Disagree</b>	0	0	0	0
<b>4) Do you agree with the statement, “The work I do should change from day to day?”</b>				
<b>A. Agree</b>	3	2	4	4
<b>B. Disagree</b>	3	4	0	0
<b>5) Do you agree with the statement, “My job should not have a lot of responsibility?”</b>				
<b>A. Agree</b>	0	1	0	0
<b>B. Disagree</b>	6	5	4	4
<b>6) Do you agree with the statement, “My job should always allow me to learn something new?”</b>				
<b>A. Agree</b>	6	5	4	4

<b>B. Disagree</b>	0	1	0	0
<b>7) Do you agree with the statement, “I should be able to keep clean at work?”</b>				
<b>A. Agree</b>	2	0	2	2
<b>B. Disagree</b>	4	6	2	2
<b>8) Do you agree with the statement, “The only reason to have a job is for the money?”</b>				
<b>A. Agree</b>	2	0	2	2
<b>B. Disagree</b>	4	6	2	2
<b>9) Do you agree with the statement, “I would like to work with others?”</b>				
<b>A. Agree</b>	5	6	4	4
<b>B. Disagree</b>	1	0	0	0
<b>10) Do you agree with the statement, “I would like to work outside?”</b>				
<b>A. Agree</b>	6	5*	3	3
<b>B. Disagree</b>	0	0	1	1
<b>11) How often do you think about what you are going to do and be after you get out of school?</b>				
<b>A. Often</b>	3	3*	3	4
<b>B. Seldom</b>	3	2	1	0
<b>12) Are you worried about knowing what you will do after high school?</b>				
<b>A. Very worried</b>	1	2*	3	4
<b>B. Not worried at all</b>	5	3	1	0
<b>13) Are you worried about knowing what you are best suited for?</b>				
<b>A. Very worried</b>	2	1	3	4
<b>B. Not worried at all</b>	4	5	1	0
<b>14) Are you worried about deciding whether you should go to college?</b>				
<b>A. Very worried</b>	1	1	2	3
<b>B. Not worried at all</b>	5	5	2	1
<b>15) Are you worried about knowing how much ability you really have?</b>				
<b>A. Very worried</b>	3	3	1	2
<b>B. Not worried at all</b>	3	3	3	2
<b>16) Are you worried about finding out how you can learn a trade?</b>				
<b>A. Very worried</b>	1	3	2	2
<b>B. Not worried at all</b>	5	3	2	2
<b>17) Are you worried about being able to find a job after you get out of school?</b>				

<b>A. Very worried</b>	4	3	2	2
<b>B. Not worried at all</b>	2	3	2	2
<b>18) Are you worried about not being able to do what you want to do when you get out of school?</b>				
<b>A. Very worried</b>	1	3	1	1
<b>B. Not worried at all</b>	5	3	3	3
<b>19) Are you worried about knowing what your real interests are?</b>				
<b>A. Very worried</b>	3	2	1	1
<b>B. Not worried at all</b>	3	4	3	3
<b>20) Have you decided on a particular kind of job that you want to aim for when you have finished your schooling?</b>				
<b>A. Yes</b>	4	3	2	2
<b>B. No</b>	2	3	2	2
<b>21) Do you know anyone who has a job like the one you want?</b>				
<b>A. No</b>	2	1	2	2
<b>B. Someone in my family</b>	1	1	2	2
<b>C. Someone I know well</b>	1	3	0	0
<b>D. Someone I know slightly</b>	2	1	0	0
<b>E. Someone I don't know personally</b>	0	0	0	0
<b>22) For the job you want, will you need more education than you plan on getting?</b>				
<b>A. Yes</b>	3	2	3	3
<b>B. No</b>	3	4	1	1
<b>Students written in career choices:</b>				
Pretest rural- jet pilot, marine, mechanic				
Post test rural- marine				
Pretest urban- producer rapper				
Post test urban-none				

\*student left question blank

**Table 9. Job ratings for the “Careers and Aspirations” at the Alternative Education Program Project School (AEPPS) and The Norfolk Botanical Gardens H.E.L.P program for An Assessment of a Vocational Horticulture Training Curriculum for Juvenile Offenders.**

<b>Job Title</b>	<b>AEPPS pretest</b>	<b>AEPPS post test</b>	<b>HELP pre test</b>	<b>HELP post test</b>
<b>Forester</b>	5	8	2	2
<b>Teacher</b>	5	0	-1	2
<b>Construction worker</b>	10	6	2	0
<b>Truck driver</b>	9	8	0	0
<b>Carpenter</b>	9	8	1	-1
<b>Sales person</b>	1	-3	3	3
<b>Bookkeeper</b>	-1	-5	1	1
<b>Factory worker</b>	3	-2	0	0
<b>Lawyer</b>	6	5	3	3
<b>Landscaper</b>	7	10	2	3
<b>Self-employed businessperson</b>	11	8	8	8
<b>Owner of a farm or ranch or nursery</b>	6	8	1	1
<b>Landscape maintenance</b>	5	6	4	4
<b>Computer operator</b>	4	5	0	0
<b>Policeman</b>	7	5	1	1
<b>Contractor</b>	6	5	2	2
<b>Actor</b>	2	-3	4	4
<b>Athlete</b>	6	2	6	6

Answers were weighted in such a way that each rating was multiplied by; two for “would like the job,” one for “wouldn’t mind the job,” and minus one for “would hate the job,” then summed for a cumulative change to determine shifts.

## **CHAPTER IV : THE BEHAVIORAL CHARTS**

### **COMPARISONS FROM THE SEMESTER BEFORE THE RESEARCH PROJECT BEGAN AND THE SEMESTER OF THE RESEARCH PROJECT**

The behavioral charts at the AEPPS monitored each youth's attendance, and the following behaviors on a daily basis: "exhibits appropriate disposition towards staff and students," "remains focused and shows interest in learning," "completes assigned tasks," "displays constructive attitude," "refrains from distracting others and seeking attention," "respectful of buildings, grounds, and equipment." These behaviors are indicators of social bond. Attendance, maintaining focus and interest in learning, and completing assigned tasks are indicators of commitment and involvement. Having an "appropriate disposition towards staff and students", and being respectful of buildings, grounds, and equipment are indicators of attachment. Refraining from "distracting others and seeking attention," is an indicator of belief in a convention of society from which other norms can be derived (Hirschi, 1969). A constructive attitude is an indicator of all four parts of a social bond.

The youths earn scores ranging from zero to four, with four being the best, and any score under four indicating a need for improvement. The charts were analyzed only for Fridays, since the research project was held only on Fridays. A Paired T Test was used to compare the semester prior to the research to the semester during the research.

When the six variables were averaged over the group, there was statistical evidence of behavioral change for two variables from before to during the research project; the students' ability to complete tasks increased, and the students' respect for the grounds decreased (Table 10).

The increase in the students' ability to complete tasks is most likely due to the fact that the students enjoyed the new horticultural tasks more than their traditional classroom tasks. The mentor logs support this idea. Mentors noted conversations that they had with students and conversations that they overheard among students on this topic (Appendix 3).

The students' demonstrated respect for the grounds decreased. The decrease in the level of respect for the grounds by the students is possibly due to the significantly increased amount of time spent on the grounds in a less structured, more hands-on learning environment that encouraged the students to manipulate the grounds around them, which inadvertently left the youth more time to exhibit negative behaviors, not intended to be vandalism. It is possible that the mentors, who maintained the behavior charts during the project, were more sensitive to perceived damage, especially to plant materials. This decrease on the behavior charts is substantiated by the decreases found on the environmental section of the social bond test (Table 6.), but is disputed by the mentors' logs (Appendix 3). In addition to new awareness of the grounds, the decrease could also be due to a common misconception in societies, especially rural societies, of the abundance of nature, and the emphasis man's dominance over nature and on using land for profit, hence leading to the mindset of devaluing all things natural (Means, 1972).

It should be noted that the accuracy of these results might be affected by two factors. First, multiple people (the school staff and the volunteers) did the charting on the behavior charts. Second, prior to the semester of the research project, the school staff often used the behavior charts as a means of controlling the students' behaviors as opposed to an actual representation of their behaviors. The volunteers did attempt to use

the charts as a means of recording the students' actual behavior, but there was no true record of the students' behavior from the previous semester. Whether or not their behavior actually changed is unclear.

**Table 10. Comparison by Paired T test of Behavior Charts from the semester before the research to the Semester during the research for An Assessment of a Vocational Horticulture Training Curriculum for Juvenile Offenders (n=6)**

Variable	Before Project				During Project			
	Mean	Standard Error	Min	Max	Mean	Standard Error	Min	Max
1. Exhibits appropriate disposition towards staff and students	3.4	0.10	0.0	4.0	3.3	0.10	1.0	4.0
2. Remains focused and shows interest in learning	3.2	0.12	0.0	4.0	3.4	0.11	1.0	4.0
3. Completes assigned tasks	3.5*	0.10	0.0	4.0	3.9*	0.04	3.0	4.0
4. Constructive attitude	3.3	0.11	0.0	4.0	3.3	0.10	1.0	4.0
5. Refrains from distracting others and seeking attention	3.4	0.10	1.0	4.0	3.2	0.11	1.0	4.0
6. Respectful of buildings, grounds, and equipment	3.8*	0.08	0.0	4.0	3.4*	0.13	0.0	4.0

\*P=0.05

Attendance on Fridays was also looked at for the semester before the research began as compared to the semester during. There was a potential of 84 possible absences, out of 14 possible Fridays that the six students were suppose to attend the semester before the research began. During that semester there were seven absences. For the semester during the project there was also potential 84 absences for 14 possible Fridays that the same six students were suppose to attend. For this semester during the research there were four absences, and one five-week suspension of one student. The five-week suspension was due to a violation in school policy that occurred outside of the horticultural program.

## **CHAPTER V: INTERNSHIP, RELATED WORK EXPERIENCE, AND FOLLOW-UP INTERVIEWS**

Two boys were hired in the internship positions with the municipality. One boy was selected as an alternate if one of the boys should choose not to accept the position, but all the youths were considered acceptable applicants by the interviewers. These two positions lasted the duration of the summer and the town horticulturist regarded the boys as excellent employees. She stated “I would hire them again in a heartbeat.” The alternate did not secure other horticultural employment for the summer, but this youth’s age made finding a job difficult. He was the youngest participant, at 14 years of age.

One boy asked for help to secure a full-time summer position on the grounds of Virginia Tech. He filled out all the applications, scheduled an interview, and secured the position. This position was slated to last the duration of the summer, but this boy quit near the end of the last month. He explained that he was switched to a new supervisor that he did not get along with and he decided to quit. The Head Grounds Manager at Virginia Tech said that he was not aware of any conflict, but that he thought this youth did a fine job while he was there. The two remaining boys independently took their resume and record of horticultural training and independently pursued horticultural jobs in the surrounding counties. One boy secured a full-time position with a small, locally owned, landscaping company and the other with a tree-trimming outfit in one of the surrounding counties. Their employers were unavailable to respond to inquiries about their performance, but both of these boys kept their job throughout the summer and have said that they enjoyed the work experience and would work there again.

According to the school staff, the work experiences were very valuable for the boys. Their science/math teacher indicated that he was going to continue the horticulture program as best he could at the boys' request. He felt that the horticulture program contributed immensely to his curriculum and the vocational information was truly valued by the students.

## **CHAPTER VI: Conclusions and Recommendations**

### **CONCLUSIONS**

This research, using the data collected from the pre and post social bond tests, aligned with the observations from mentor logs, and accompanied by the behavior charts indicate that this vocational horticulture-training curriculum may in fact be a tool to improve social bonding in juvenile offenders.

This study also tested the effectiveness of the curriculum at evoking changes in attitudes about personal success, and individual perceptions of personal job preparedness among juvenile offenders. The “career and aspirations” pre and post tests indicate that the students are more worried about their personal success and job preparedness. There is evidence in the follow-up interviews conducted with the teachers that this has motivated these youth to develop goals and solidify their future plans (Appendix 4 and 5). The following data were collected to help substantiate the test results: participants performance and successful completion of the program emphasizing the necessary skills to be marketable in grounds maintenance and other entry-level jobs within the profession of horticulture, either their acceptance to the prearranged internship or ability to acquire horticulture related employment, and comments collected from the school faculty.

Two youth earned the internship position, one was selected to serve as an alternate to these positions, and all three of the remaining boys managed to acquire and retain horticulture related jobs throughout most of the summer. This indicates that these youth appear to have a desire to be successful, and can maintain some level of professionalism. In addition, this project appears to have helped the youth profiled in this study to think

more practically about their career choices. Another benefit of this curriculum was that it provided the youths the chance to succeed and develop pride in themselves through work. The hardest part for most delinquents is finding the opportunity to prove that they can be successful, and develop a positive social image.

Unfortunately, because of their backgrounds, juvenile offenders unusually experience a reduced exposure to opportunities. Additionally, most juvenile offenders do not come from homes or communities where they encounter positive role models (Kaplen, 1975, Hirschi, 1969). Even with the advantage of programs like this one, which was designed to teach them useful skills, provide positive role models, and develop personal esteem, it is often hard to counter the affects of negative influences. This is especially true when the amount of time that the youth experiences the negative affects of their home and community far exceeds the amount of time that the same youth is in the presence of a person who wishes to help them succeed. This is the problem with a short-term program. Often when a former juvenile offender finally 'gets a break', there is a period of regression where the youth will begin to emulate some former unsavory role model. This type of behavior often accompanies short-term programs. It is widely believed that short-term programs lead to short term success, and to achieve any sort of long term success requires a long-term commitment (Rice, 1994, Kaplen, 1975, Lyerly and Skipper, 1981, Gardner and Shoemaker, 1989).

According to the goals stated for this research project, the youth profiled in this study appear to have responded positively to the educational style that the curriculum followed, but this study does not attempt to make broad statements about juvenile offenders because of the small number of subjects involved. This study intended to

provide a profile of several youths response to vocational horticultural training in response to the objectives stated in the introduction. It is exploratory in nature and provides ideas for future larger scale research and confirms some existing trends in research with juvenile offenders.

In light of this exploratory research, a curriculum for vocational horticulture programs should be based on each state's "Standards of Learning" for basic high school subjects. It should enhance Math and Science curriculums with horticultural knowledge and skills and enhance English curriculums used by schools by including communication skills for interviewing, resume writing, and the proper way of filling out job application forms.

A curriculum for vocational horticulture programs should also address the following vocational horticultural considerations:

- use job descriptions provided by local professionals in the industry, who could serve as potential employers.
- teach job skills presented during visits to professional job sites and by visiting professionals.
- teach from very hands-on curriculums, utilizing all possible resources, like greenhouses and field trips to potential employers.
- offer the opportunity to apply the skills learned in "job-like" settings.
- allow the students the opportunity to work with others in a team-like fashion.
- provide the opportunity to contribute meaningfully to the community, i.e. project sites within the community, where students maintain and/or help to build gardens,

- provide real work experience, i.e. internship or prearranged interviews with local employers.

These types of experiences help the youth to make appropriate realistic career choices. In addition, they give the youth the opportunity to be seen by themselves and members of their communities as productive people, helping to better themselves and their community. This type of positive perception will continue to motivate these youth to improve their behavior.

**RECOMMENDATIONS RECEIVED FOR FUTURE PROGRAMS FROM THE ALTERNATIVE EDUCATION PROGRAM PROJECT SCHOOL TRAINING TEAM**

*Students' Recommendations:* The boys who participated in the study from the AEPPS indicated that in the future they would like to have more input regarding the activities in which they would participate. There was some request for more male volunteers. Others said the gender mix was fine, while some of the boys wanted more female volunteers.

*Administration's Recommendations:* The AEPPS administration requested greater organization and consistency in volunteer participation, and recommended a fixed set of volunteers to help the students develop a greater sense of security. The length of this project and the number of people participating did, on occasion, compromise organization. Some volunteer turn over was to be expected, but it was hoped that the core group of mentors involved would remedy this to some extent. The administration also recommended that the volunteers' views remain consistent with the values and rules being taught at the school. This is something that could be addressed during volunteer recruitment. At the time of this project it was not expected to be an issue.

***Volunteers' Recommendations:*** The volunteers asked for more training to help keep the activities more organized. Some of the volunteers stated that “something needed to be done” about the teacher involvement. Initially getting the teachers and the administration to see the program as more than just a recreational outlet for the boys was a challenge, and this frustrated the volunteers. As the program progressed, there did seem to be more genuine interest and involvement on the teachers' part. This situation could be remedied by supplying the teachers with data on the beneficial affects of a program and a specific schedule of their involvement and responsibilities, coupled with some time to observe the beneficial affects of a program.

***Researcher's Recommendations:*** Relying so heavily on volunteers affected the outcome of this project. The interplay between students, teachers, mentors, volunteers, and speakers all played an unexpected part in how much the youths learned and how well they behaved during the course of this project. In addition, the unstable home environments of the youth participating in this study had a great impact on the research results, particularly in short-term projects.

There were two initial draw backs encountered early on in the research. The first related directly to the fact that all but one of the mentors was a female college student. This was initially very intimidating to the high school aged boys, but some positive aspects became apparent through the course of the study. Ultimately, the boys may have benefited from seeing young females in a different light. There were occasions where the young males in the study claimed the work was too hard or that they had been working too long, only to be out-performed by the female mentors. Without creating an atmosphere of competition usually found in an all-male setting, the young males were inspired to work

harder. Hopefully, this will help these youth to expand their views of females to include ones where females can be seen as more equal.

The second initial draw back related to the fact that all of the mentors were university students. In the end this created an opportunity for the students participating in this study to see the collegiate environment “up close” and break down some of the barriers and misconceptions that these youths had about college students and college life. Initially though, it did create some misunderstandings, miscommunication and consequently some behavioral outbursts.

Due to the lack of adequate formal, initial volunteer training, there was on occasion, some confusion about how activities were to be conducted. Volunteers either did the work for the boys or, were too “hands off” on others. Either of these interactions is counter to the use of this curriculum to evoke changes in attitudes about personal success and individual perceptions of personal job preparedness. Since lack of self-confidence is an issue with these youths, letting the boys come to their own conclusions and/or feeling that they were the ones to decide how an activity was to be done, can help teach these two important concepts (Kaplen, 1975). Exact instruction only reinforces the feelings of inadequacy that accompanies a sense of no control (Kaplen, 1975). These feelings will only fuel their desire to avoid new situations where they may fail (Kaplen, 1975). The expectation is that volunteers will help to cultivate a sense of personal success and prepare these youth for horticultural jobs to come.

The key to a successful volunteer experience is the right group of well-trained individuals. A volunteer training session for a project needs to include a detailed discussion on project goals, personal responsibilities within the context of the project,

techniques of executing the work, interpersonal relations with all project team members and subjects, data collection, and volunteer confidentiality.

***Recommendations Regarding Future Research:*** There is a need for research in this area that addresses:

- how the length of vocational horticultural training program can determine its effectiveness
- how the number of participants within a program can determine its effectiveness
- whether or not a horticultural training program is more effective if it is academically focused versus having a vocational training focus
- how the needs differ for urban youth versus rural youth, and how programs should be designed to address these needs

*Authors note:* As a result of this study the Alternative Education Program Project School received a grant from the public school system to continue teaching vocational horticulture as part of their science and math program. The grant was pursued much by the request of the students.

Also as a result of this research project, one of the volunteer mentors, upon her graduation, was offered a job as an Assistant Horticultural Therapist at a North Carolina State Prison.

## Literature Cited

- Boutard, S. 1991. Historical Overview: Berkshire Farm Center and Services for Youth. Berkshire Farm Center, Canaan, NY.
- Brockway, Z. R. 1997. The American Reformatory Prison System, p. 56-69. In: Marquart, J.W., J.R. Sorensen (ed.) Correctional Contexts, Contemporary and Classical Readings. Roxbury Publishing Company. Los Angeles, CA.
- Bulkley, N. 1993. The Green Teachers: The environment is where you are. *Earth Work* 3(7): 4-8.
- Bryant, C. 1990. Forward. In: Bryant, C. (ed.) *Deviant Behavior: Readings in Sociology of Norm Violations*. Hemisphere Publishing Company, NY, NY.
- Bryant, C. 1990. Forward. In: Shoemaker, D. (Au.) *Theories of Delinquency*. Oxford University Press, NY, NY.
- Campbell, A. N., T.M.Walliczekk, J.C. Bradley, J.M. Zajicek, and C.D. Townsend. 1997. The influence of activity-based environmental instruction on high school students' environmental attitudes. *HortTechnology* 7(3): 309.
- Campbell, H. 1896. *Darkness and Daylight; or, Lights and Shadows of New York Life*. A pictorial record of personal experiences by day and night in the great metropolis. Hartford Publishing Company. Hartford, Conn.
- Cotten, M. 1975. Effectiveness of horticultural therapy in lowering aggressiveness of institutionalized delinquent adolescents, Melwood Farm. *Nat. Council for Therapy and Rehab. Through Hort. Newsletter*. 1(5): 2-4.
- Davis, S. 1997. Development of the Profession of Horticultural Therapy, A History. p.3-17. In: Simson, S. P. and M. C. Straus (ed.) *Horticulture as Therapy, Principles and Practice*. The Haworth Press, Inc. NY, NY.
- DeMarco, L. W. 1997. *The Factors Affecting Elementary School Teachers' Integration of School Gardening into the Curriculum*. Dissertation, Virginia Tech., Blacksburg, VA.
- de Beaumont, G. and A. de Tocqueville. 1997. On the penitentiary system in the united states and its application in france. In: Marquart, J.W., J.R. Sorensen (eds.) *Correctional Contexts, Contemporary and Classical Readings*. Roxbury Publishing Company. Los Angeles, CA.

- Dillman, D. A. and J. A. Christenson. 1972. The value for pollution control. p. 237-257. In: Burch, W. R., Creek, N. H., Taylor, L. (eds.) *Social Behavior, Natural Resources, and the Environment*. Harper and Row, Publishers, NY, NY.
- Douchette, J. 1997. Seven youthful offenders graduate from Norfolk's landscape course. *The Virginia-Pilot Hampton Roads*, August 8.
- Elliot, G. C., H. L. Ziegler, B. M. Altman and D. R. Scott .1990. Understanding stigma: dimensions of deviance and coping. In: Bryant, C. (ed.). *Deviant Behavior: Readings in Sociology of Norm Violations*. New York: Hemisphere Publishing Company, NY, NY.
- Finch, C.R. 1995. Green Brigade: Horticultural learn-and-earn programs for juvenile offenders. *HortTechnology* 5(2):118-120.
- Flagler, J. 1994. Corrections and the green industry. p. 283-291. In: Flagler, J. and R. P. Poincelot (eds.) *People-Plant Relationships: Setting Research Priorities*. Hawthorn Press, NY, NY.
- Flagler, J. 1995. The role of horticulture in training correctional youth. *HortTechnology* 5(2): 185-187.
- Foucault, M.1997. Discipline and punishment: the birth of the prison. p. 28-37. In: Marquart, J.W. and J.R. Sorensen (eds.) *Correctional Contexts, Contemporary and Classical Readings*. Roxbury Publishing Company, Los Angeles, CA.
- Gardner, L. and D. J. Shoemaker. 1989. Social bonding and delinquency: a comparative analysis. *The Sociological Quarterly* 3(30): 481-500.
- Heeren, J. and D. Shichor. 1990. Mass media and delinquency prevention: the case of 'scared straight. In: Bryant, C. (ed.) *Deviant Behavior: Readings in Sociology of Norm Violations*. New York: Hemisphere Publishing Company, NY, NY.
- Hirschi, T. 1969. *Causes of Delinquency*. Berkeley: University of California Press, Berkeley, CA.
- Hume, E. 1976. Vocational gardening at the monroe reformatory. *Nat. Council for Therapy and Rehab. Through Hort. Newsletter* 2(4):3-4.
- Hutchison, Jim. 1998. Seeds of Hope, with little more than wheelbarrows and hard work, the kids planted a garden-and grew a miracle. *Reader's Digest* 151(910), 66-72.

- Kaplen, H. 1975. *Self-Attitudes and Deviant Behavior*. Goodyear Publishing Company, Inc., Pacific Palisades, Los Angeles, CA.
- Lewis, C. 1976. The evolution of horticultural therapy in the united states. *Nat. Council of Therapy and Rehab. Through Hort.* 2(5) 1-6.
- Lyerly, R. R. and J. K. Skipper, Jr. 1981. Differential rates of rural-urban delinquency: a social control approach. *Criminology* 19(3): 385-399.
- Lohr, V. I. 1992. Research on human issues in horticulture motivates students to learn science. *HortTechnology* 2(2):257-261.
- Rusche, G., O. Kirchheimer.1997. Punishment and social structure. p.16-28. In: Marquart, J.W. and J.R. Sorensen (eds.) *Correctional Contexts, Contemporary and Classical Readings*. Roxbury Publishing Company, Los Angeles, CA.
- McEvoy, J. 1972. The American concern with the environment. p. 214-237. In: Burch, W. R., Creek, N. H., Taylor, L. (eds.) *Social Behavior, Natural Resources, and the Environment*. Harper and Row, Publishers, NY, NY.
- Meisenhelder, T. 1990. Becoming normal: certification as a stage in exiting from crime. In: Bryant, C. (ed.) *Deviant Behavior: Readings in Sociology of Norm Violations*. Hemisphere Publishing Company. NY, NY.
- Migura, M.M., L.A.Whittlesey, and J.M. Zajicek. 1997. Effects of a vocational horticulture program on the self-development of female inmates. *HortTechnology* 7(3): 299-304.
- Migura, M. M. and J.M. Zajicek. 1997. Research tools for evaluating the effects of a vocational horticulture program on self-development of female inmates. *HortTechnology* 7(3): 305-308.
- Montgomery County Public Schools, Pulaski County Public Schools. 1998-99. Alternative education program project school is part of a regional program for behaviorally disordered youths. Unpublished.
- Nelson, G. 1977. FTD Shop joins industry with criminal justice system. *Nat. Council for Therapy and Rehab. Through Hort. Newsletter* 3(4):2.
- Norfolk Botanical Gardens, The Norfolk Juvenile Justice Court, and Norfolk Division of Youth Services. 1997. Proposal: Intensive supervision and horticulture job training program. Unpublished.
- Plant-People Council.1992. *People-Plant Council: Linking horticulture with human well-being*. *HortTechnology* 2(2):286-287.

Relf, D. 1997. A definition of horticultural therapy,  
<http://www.hort.vt.edu/human/human.html>.

Relf, D. 1992. Human issues in horticulture. *HortTechnology* 2(2):159-172.

Relf, P. D. 1990. The use of horticulture in vocational rehabilitation. *Journal of Rehabilitation* 47(3):53-56.

Rice, J. S. and L. L. Remy. 1994. Cultivating self development in urban jail inmates. p. 229-257. In: Francis, M. P. Lindsey, J.S. Rice (eds.) *The Healing Dimensions of People-Plant Relations: A Research Symposium*. Center for Design Research, Dept. of Env. Design. UC Davis, CA.

Sagarin, E. 1990. Deviance without deviants: The temporal quality of patterned quality of patterned behavior. In: Bryant, C. (ed.) *Deviant Behavior: Readings in Sociology of Norm Violations*. Hemisphere Publishing Company, NY, NY.

Sheffield, B. K. 1992. The affective and cognitive effects of an interdisciplinary garden-based curriculum on achieving elementary students. Dissertation. University of South Carolina, Columbia, SC.

Tougas, M. 1975. Project Mother Earth. *Nat. Council for Therapy and Rehab. Through Hort.* 2(4): 1-3.

Townsley, W. W. 1978. Horticultural therapy programs in landscaping and grounds maintenance for problem youth. *Nat. Council for Therapy and Rehab. Through Hort. Newsletter* 5 (4): 1-4.

## **APPENDIX 1: THE CURRICULUM**

### Module 1:     **About The Career**

#### **February 13**

Today we will meet at the school. We will take the tests, sign consent forms, and introduce the curriculum. A professor of the two year agricultural tech. program at Virginia Tech will come to talk about greenhouse management. We will divide into three rotating groups today: one to clean greenhouse, one to discuss plant care, one to make cuttings.

#### **February 20**

Today we will meet at the Virginia Tech Greenhouses and Gardens. The Head Greenhouse Manager at Virginia Tech will talk about his job and we will tour greenhouses and gardens.

#### **February 27**

Today we will meet at the school. The Head Grounds Manager at Virginia Tech is coming to talk about Virginia Tech's grounds and grounds workers. We will go over how to fill out job forms, discuss tools of the trade, care and safety, interview skills, and the career of horticulture.

### Module 2:     **Skills**

#### **March 3**

Meet at the school today. A Master Gardener volunteer will come and will do a Compost Demonstration. He will discuss and demonstrate how to compost and talk for a short while about all the benefits and uses of compost. We will also discuss designing a garden at the Compost Demonstration Garden Site. We will design and build a composting site at the school. Also, a Landscape Design Student demonstrates Garden design. We will divide into two rotating groups today. One to turn the compost and sort of get a chance to inspect it, and one to draw up garden designs.

#### **March 13**

Today we will meet at Nellie's Cave Arboretum for a Pruning Demonstration. We will discuss different cuts, how you prune and why, also safety. Everyone gets to prune.

#### **March 23**

Meet at the school for a greenhouse day. There will be three groups, one to repot cuttings, one to repot new plants, one to do greenhouse chores.

#### **March 27**

Meet at the school for Building Day. Local craftsman will come today to demonstrate, design and teach us how to build benches for the greenhouse. Everyone will participate.

### Module 3:     **Building a Garden**

#### **April 3**

Meet at the school. A local landscaper will take us to two of his landscape sites. He will talk about landscape care, the job, and the skills. He will discuss materials, terrain, hydrology, soil, best plants, etc. Everyone will work on landscape site maintenance and installation.

#### **April 8**

Meet at the school to plant trees. An urban forestry graduate student will demonstrate by planting a tree at the school, the proper way to plant a landscape tree. He will be bringing three more trees for each group to plant.

#### **April 17**

Meet at the school. We will all go to Nelle's Cave Arboretum to plant a wildflower meadow. Everyone will turn the soil and plant seeds. Also, a trip by the personnel office at Tech to look at the job board.

#### **April 22**

Meet at the school to install the school's landscape. All three groups will plant bulbs at school and install landscape.

### Module 4:     **Completing Projects; Planting and Plant Sale**

**May 1** Interviews with Town Horticulturist for the two internship positions

**May 8** Work at Virginia Tech Spring Plant Sale

#### **May 15**

Meet at the Compost Demonstration Site Garden at the Blacksburg Recreation Center to install the flower garden. Each group will be designated a quad to work in.

#### **May 22**

Meet at the Compost Demonstration Site Garden to water, mulch, and do general planting maintenance. Each group will maintain their quad (i.e. water, weed, etc).

#### **May 29**

Meet at the school. Today we will build one last raised bed for the school's future horticultural projects. We will also maintain school landscape and help to beautify our community by planting some of our left over flowers in a few planters at a local apartment building. Today will also be the day to fill out the post tests.

#### **June 5**

Meet at the school. Today we will wrap up the project, give out certificates, and celebrate!

## **APPENDIX 2: PRE AND POST TESTS**

### **SOCIAL BOND TEST**

#### **PART I: SCHOOL**

1) In general, do you like or dislike school?

- A. Like it
- B. Dislike it

2) Which of these three things do you think is the most important thing that you can get out of school? (Choose only one.)

- A. Job training
- B. Skill in subjects like English and Math
- C. Ability to think clearly

3) How important do you think what you learn in school is to getting a job?

- A. A lot
- B. A little

4) How important do you think grades are for getting the kind of job you want when you finish school?

- A. important
- B. unimportant

5) Do you agree with the statement, "The things I do in school seem worthwhile and meaningful to me."

- A. Agree
- B. Disagree

#### **PART II: TEACHERS**

6) Do you care what teachers think of you?

- A. I care a lot
- B. I don't care much

7) Do you agree with the statement, "Most teachers enjoy teaching?"

- A. Agree
- B. Disagree

8) Do you agree with the statement, "Teachers teach me information that is relevant to my life."

- A. Agree
- B. Disagree

9) Do you agree with the statement, "I share my thoughts and feelings with my teachers?"  
A. Agree  
B. Disagree

10) Would you like to be the kind of person your teachers are?  
A. Yes  
B. No

### PART III: PEERS

11) Do you agree with the statement, "My friends respect other people?"  
A. Agree  
B. Disagree

12) Would you like to be the kind of person your friends are?  
A. Yes  
B. No

13) Do you care what your friends think of you?  
A. Yes  
B. No

14) Do you agree with the statement, "I share my thoughts and feelings with my friends."  
A. Agree  
B. Disagree

15) How much influence do your friends have on your decisions?  
A. A lot  
B. A little

### PART IV: OPINIONS

16) Do you agree with the statement, "What is going to happen to me will happen, no matter what I do."  
A. Agree  
B. Disagree

17) Do you agree with the statement, "I would rather not start something at which I may not be successful."  
A. Agree  
B. Disagree

18) Do you agree with the statement, "I should not expect too much out of life."  
A. Agree  
B. Disagree

19) Do you agree with the statement, "I do not have much to be proud of ."

- A. Agree
- B. Disagree

20) Do you agree with the statement, " On the whole, I am satisfied with myself."

- A. Agree
- B. Disagree

21) Do you agree with the statement, " Success is up to the individual."

- A. Agree
- B. Disagree

#### PART V: ENVIRONMENTAL ATTITUDES

22) Do you agree with the statement, "It's okay sometimes to mark up, break or destroy property."

- A. Agree
- B. Disagree

23) Do you agree with the statement, "It's okay sometimes to step on, trample, pull up or destroy plants."

- A. Agree
- B. Disagree

24) Do you agree with the statement, "You should try to make your community a better place."

- A. Agree
- B. Disagree

25) Do you agree with the statement, "All bugs are bad."

- A. Agree
- B. Disagree

26) Do you agree with the statement, "It is all right to litter if you don't get caught."

- A. Agree
- B. Disagree

27) Do you agree with the statement, "Environmental issues only affect people who live in the city".

- A. Agree
- B. Disagree

28) Do you agree with the statement, "It's okay to pollute as long as you are on your own land."

- A. Agree
- B. Disagree

29) Do you agree with the statement, "Everyone should try to recycle as much as they can."

- A. Agree
- B. Disagree

30) Do you agree with the statement, "People should protect animals and plants."

- A. Agree
- B. Disagree

31) Do you agree with the statement, "You shouldn't park your car on the grass."

- A. Agree
- B. Disagree

32) Do you agree with the statement, "Food scraps and yard waste can be recycled instead of thrown away."

- A. Agree
- B. Disagree

33) Do you agree with the statement, "Working with plants or being around plants has always been a part of my life."

- A. Agree
- B. Disagree

34) Do you agree with the statement, "People who live in the country don't have to be environmental."

- A. Agree
- B. Disagree

35) Do you agree with the statement, " People in this community think plants are important."

- A. Agree
- B. Disagree

## CAREER AND ASPIRATIONS TEST

1) As you see it now, how much schooling would you *like* to get eventually?

- A. Some high school
- B. High school graduation
- C. On the job training
- D. Trade or business
- E. Some college, junior college or community college
- F. College graduation (four years)
- G. More

2) From the previous question how much schooling would you *expect* to get eventually?  
Circle letter: A B C D E F G

3) Do you agree with the statement, "My job should allow me to work with my hands."

- A. Agree
- B. Disagree

4) Do you agree with the statement, "The work I do should change from day to day."

- A. Agree
- B. Disagree

5) Do you agree with the statement, "My job should not have a lot of responsibility."

- A. Agree
- B. Disagree

6) Do you agree with the statement, "In my job it should be possible for me always to be learning something new."

- A. Agree
- B. Disagree

7) Do you agree with the statement, "I should be able to keep clean at work."

- A. Agree
- B. Disagree

8) Do you agree with the statement, "The only reason to have a job is for the money."

- A. Agree
- B. Disagree

9) Do you agree with the statement, "I would like to work with others."

- A. Agree
- B. Disagree

10) Do you agree with the statement, "I would like to work outside."

- A. Agree
- B. Disagree

11) How often do you think about what you are going to do and be after you get out of school?

- A. Often
- B. Seldom

12) Are you worried about knowing what you will do after high school?

- A. Very worried
- B. Not worried at all

- 13) Are you worried about knowing what you are best suited for?  
A. Very worried  
B. Not worried at all
- 14) Are you worried about deciding whether you should go to college?  
A. Very worried  
B. Not worried at all
- 15) Are you worried about knowing how much ability you really have?  
A. Very worried  
B. Not worried at all
- 16) Are you worried about finding out how you can learn a trade?  
A. Very worried  
B. Not worried at all
- 17) Are you worried about being able to find a job after you get out of school?  
A. Very worried  
B. Not worried at all
- 18) Are you worried about not being able to do what you want to do when you get out of school?  
A. Very worried  
B. Not worried at all
- 19) Are you worried about knowing what your real interests are?  
A. Very worried  
B. Not worried at all
- 20) Have you decided on a particular kind of job that you want to aim for when you have finished your schooling?  
A. Yes  
B. No
- 21) Do you know anyone who has a job like the one you want?  
A. No  
B. Someone in my family  
C. Someone I know well  
D. Someone I know slightly  
E. Someone I don't know personally
- 22) For the job you want, will you need more education than you plan on getting?  
A. Yes  
B. No
- 24) How would you feel about taking these jobs?  
Write A, B, or C, for *each* job listed below

A. Would like it

B. Wouldn't mind it

C. Would hate it

1. Forester
2. Teacher
3. Construction worker
4. Truck driver
5. Carpenter
6. Sales person
7. Bookkeeper
8. Factory worker
9. Lawyer
10. Landscaper
11. Self-employed businessperson
12. Owner of a farm or ranch or nursery
13. Landscape Maintainace
14. Computer operator
15. Policeman
16. Contractor
17. Actor
18. Athlete

Other:

### **APPENDIX 3: SELECTED JOURNAL ENTRIES AND EXERPTS FROM MENTORS AT THE ALTERNATIVE EDUCATION PROGRAM PROJECT SCHOOL**

Journal entries and excerpts are presented unedited from their original form.

MENTOR 1:

THE FIRST DAY, 2/13/98

“Kids were a little shy. Two of the boys did not want to participate at all in the program but eventually joined the group. I asked John\* and the other boy who didn’t want to participate, why? Their reply was that they where being forced to do it and where trying to prove a point, By the end of the day all the boys had opened up quite a bit and seemed interested in horticulture. Some projects, such as making cuttings and placing them in cells, seemed to get monotonous for the boys. Activities, unless a little more intense, should be broken into shorter spans.”

2/20/98

“Today, we went to VT greenhouses and took cuttings. Everyone seemed to enjoy this as they were able to make choices on which plants they wanted. I took Don\* and Ray\* around the gardens. Very pleasant guys.

Don seemed like a bright guy and will answer questions when asked, but seemed almost reluctant to volunteer information. Don\* is the youngest of the group and gets “picked on” by the others. This may be the cause for his reluctance. Ray is very bright. He picks up info. very quickly and seems to bring in a lot of previously learned knowledge. He holds back, also, but eventually opens up (a little).

Great guys, just need a boost.”

2/27/98

I stayed in the greenhouse and spoke about “Tool Safety”. I suppose it could have been better if we had been more prepared. There ended up being a lot of talk about marijuana and drinking. They all know that it is illegal and that they shouldn’t be doing it, but it seems that they can’t figure out that it isn’t necessarily cool to do those things. John\* spoke about going to church and how much he enjoyed it and has cut down on being bad. I thought that was great that he has some type of spiritual balance, especially if school or family life are out of whack. (The other volunteer I worked with today) was great about telling them there was a time and a place for everything. They listen, but I think they still see us a little as authoritative and they are being lectured to. But, good kids.

BUILDING DAY, 3/27/98

Wonderful day! Most likely best one yet. Built benches for the greenhouse. They loved the construction. They were able to use math knowledge for measuring. No harsh words to anyone. Good job to everyone.”

LOCAL LANDSCAPER CAME TO TALK, 4/3/98

“We went to his landscape planting here in town. None of the guys were really paying attention. I think it had to do with his interactions with them, he was almost too business like with them (which I know they need to get use to, but they didn’t really know him at all). This wasn’t very productive. We then went to campus and planted some shrubs. Everyone was running around, and their teacher was no help. He took the guys to get drinks in the middle of a project, but we got it done. Not a great day, but I think they learned a little.

## THE WILDFLOWER PLANTING 4/17/98

“Went to the arboretum and tilled soil for planting of wildflowers. Not a great activity for them. Too much room to joke around. Tim\* surprised me, Tom\* was making stupid jokes and Tim had enough sense to say something like, ‘I’m not associated with him’.

Too many volunteers on this day. I think it bewilders (lack of a better word) the guys when there are so many people.”

4/22/98

“Planted beds around the school today. Everyone did a good job. Mike\* is a very hard worker and seems to enjoy everything that we are doing, but gets into trouble still. There are so many outside factors affecting these guys’ development into men that makes it so frustrating. They will be so great, and then decide that they want to be rebellious.”

## THE INTERVIEWS 5/1/98

“The guys had interviews with the Town of Blacksburg for summer jobs. They were wonderful! All wore ties, very professional. I think they felt wonderful about themselves. Everyone was nervous, which was to be expected. But coming out of the interview, their heads were held a little higher. I think it made them feel a little older and I think it was all of their first interviews. I was very proud of their behavior and attitudes during the procedure. Good humors all around!”

This was a serious interview. There were three interviewers at a table to ask questions when each boy went in. One would come out they would all ask in “How’d it

go? What'd they say?" I overheard Tim\* say, "Wow, this is like a real job, not just like working for my Uncle down at the junk yard."

#### POTTING UP AND PICKING OUT PLANTS FROM THE GREENHOUSE, 5/6/98

"This was great, it was nice to see everyone (except Todd\*) get so excited about getting to take the plants home. Good Day!"

#### OVER ALL OBSERVATIONS

"This was a great program. I think it was very rewarding for everyone involved. It seemed a little disorganized some days. It was mainly on the days when there were a ton of volunteers. Sometimes I felt like I was in the way and in turn didn't interact with the guys as much as I would normally have. I think it would have helped if their teacher would have stepped back a little. In all, a great program, Good job, and thanks for letting me be a part of it."

#### MENTOR 2:

##### FIRST DAY, 2/13/98

We met the kids for the first time- they all seemed like good kids. None of them seemed too interested in the program-all were pretty quiet.

##### 2/20/98

We met with the kids at the Virginia Tech gardens today. We broke into small groups and toured the area. I was with Mike\* and Todd\*. They liked being outside- outside of school setting, I guess. They opened up a bit with (the other volunteer) and me. We talked about plants and stuff they liked to do. Weed was on the top of their list. They both were on good behavior the whole time, and seemed interested in the plants.

3/6/98

Today we talked about composting with a guest speaker. We also started to sketch some landscape ideas for the school. We wanted the kids to start thinking about landscaping, and how they are going to do that. While they were listening to the speaker, they were being polite, even though they looked bored. They answered questions correctly, and took in some information.

When we were drawing landscape plans, Tim\* was into the drawing part, Tom\* was having fun looking at the pictures and picking out possible plants, and Mike\* couldn't stop talking about putting in a gazebo, like the one he saw at the Tech gardens. Each one had some interest in the idea, which is great.

When we went out to the compost center, everyone's attention span dropped, and there didn't seem to be much interest in turning the compost. I think we should have quit earlier today. Todd\* doesn't seem to like (the project director) much. He kept saying it makes him mad when she doesn't show him any respect. (Of course, this was after she yelled at him for trying to kick a landscaping bed out of the ground while we were at the composting center.) Over all a good day!

#### **BUILDING DAY 4/16/98**

Today, the kids were building another bench for the greenhouse. I helped Todd\* water, and he didn't seem too interested. Everything was still overwatered. It seems as though they are all more interested in building than in the plants.

#### **THE WILDFLOWER PLANTING 4/17/98**

Today we went to Nellie's Cave to plant part of the wildflower garden. Most of the kids worked on the soil, while Don\* and me and (another volunteer) turned the

compost and put the good stuff in the wheelbarrows to bring down to the plot. Don\* wasn't complaining like he usually does, and I think it was because he was alone with us. He liked us there, and I think we entertained them. Working the soil wasn't very exciting for everybody, but when it was done, it seemed like they enjoyed spreading the seeds out. (Their teacher) is going to bring them back out there in the summertime so they can see the final product.

MENTOR 3:

THE FIRST DAY, 2/13/98

(The project coordinator) introduced us and the program. Students seemed uninterested until questions were asked of them and they could knowledgeably answer. (A speaker) spoke to them about history and general info (about greenhouses and horticulture). They perked up a little bit. They asked intelligent questions and answered using good reasoning.

2/27/98

(The head of Grounds Maintenance at Virginia Tech) spoke to them this AM. They seemed to like the equipment he showed. I noticed the students get restless and fidgety when he would talk at length. When he made conversation with them and asked questions, all of the students entered in. Some very good questions were asked and thoughtful answers were given by the students. These indicate to me that they were listening and thinking about the information. I was impressed with their increase in enthusiasm from the last time I saw them. I can tell they would much rather be doing these things rather than just talking about them. They, and I, learned that, even if you don't have a good education or perfect physical ability, you can have a satisfying,

enjoyable job. The key is to go get it. “Where there’s a will, there’s a way.” was mentioned and the importance of being a productive person.

3/27/98

I am coming early so that I can help get some of the watering done in the greenhouse. Tom\* was the waterer. He did very well. Right before breakfast he and another got the hose out. We looked at the plants and determined who needed water. He responded great and answered questions wisely. No great enthusiasm, but there was willing participation. Today they built benches for the greenhouse. They seemed to enjoy the activities-sawing, drilling, etc. They needed all of the supervision and enjoyed the competition.

LOCAL LANDSCAPER CAME TO TALK, 4/3/98

The boys were allowed to shoot some b-ball this AM so it was more difficult to get willing participation. Tom\* was the waterer again and though it had been a week-he thought it was “too soon to do it again”. With coercion and finally a demand from (the project coordinator), we got the hose out and watered. This participation wasn’t willing and he wanted to just spray everything without really checking it. I was glad for that much participation, so that’s what we did, and got it over with quickly. The owner of Meadowbrook Gardens spoke a bit, then we headed to one of his landscapes. We looked at the landscape and he told us what plants were and why he placed them where. He only took about 15-20 minutes, but that was too long because the kids and the teachers seemed bored. The info was a bit deep for folks who know nothing about that stuff. We helped with pruning, weeding, and mulching. There was initial concern among the students about “working for free.” But they were convinced that they were getting an education from it

and only had to do a small area. With three little groups and us volunteers working with them, they seemed to enjoy doing these activities. They worked together well and enjoyed some competition. (Then I had to leave.)

#### NELLIE'S CAVE ARBORETUM, THE WILDFLOWER PLANTING 4/17/98

The greenhouse did not need water because of cloudiness and overwatering. It's my opinion that the teachers are a bit lax. This AM a couple of guys decided they were still hungry and they spent 30 extra minutes fixing biscuits and sausage gravy for them to eat. Rather than enforcing the rules, etc. It seems they are babysitting. This horticulture program seems to be viewed as recreation rather than valuable information for the students. These teachers need a pep talk of their own!

Since I left early, I didn't have time to work with the kids. They took applications to the personnel office before going to the arboretum, and were late getting there.

#### VT PLANT SALE, 5/8/98

I mostly did observation today-I did not work directly with anyone. The kids seemed to enjoy helping people. At first, they were scared, but soon found that they could help a lot by just carrying plants for customers. They did well when they were kept busy.

#### PLANTING COMPOST DEMONSTRATION GARDEN, 5-14-98

"This was a fun day. We took plants they had raised in the greenhouse over to the Blacksburg Recreation Center. We arranged the plants and explained why we put things where. After adding compost to the beds, we worked it in. We worked pretty much one-on-one with the boys. There was a remarkable difference in their behavior when they were separated. I worked with \*Joe in a couple of areas. He seemed to enjoy what we

were doing (planting) and readily caught on to tips, etc. that I gave him about what we were doing.

I don't think that they wanted to show *too* much pride in the garden but I think it was felt after we viewed the finish product. One student even mentioned the possibility of showing it to his mom and girlfriend.”

#### THE FINAL TEST, 5/29/98

Today we divided some plants from the greenhouse. At first they didn't want plants but it almost became a “see who can take the most” game. Most seem like they actually care for the plants. After we finally got things straightened up and put away we went to (one of their teachers) apt.. We planted some for him. All did very well. When we went inside, everyone was very courteous and polite to his wife and baby. They did the final test for (the project coordinator) without too much objection. They stumbled on some of the words, etc. but did pretty well overall.

I have noticed an improvement in over all behavior and that may just be due to our familiarity.

#### MENTOR 4:

#### THE FIRST DAY, 2/13/98

This was the first day of volunteering. I arrived late. When I arrived at the school, the boys and some of the volunteers were finishing cleaning out the greenhouse. Plant care was discussed. Myself, one of the volunteers and two of the boys were transplanting an “Umbrella Plant” into a bigger pot. We talked about how weeding and fertilizing were important for taking care of plants. Nurturing of the plant was also discussed and how it is a good thing to care for and about something or someone else as well as “self”. We also

potted up a lot of smaller plants. An experiment on a “Wandering Jew” plant was made where one side was left alone and the other side was picked of dead leaves and stems. Two of the boys were told to watch and see what would happen to the plant and how beneficial it is, again, to care for plants including pruning and deadheading.

I thought that the boys seemed interested, even on the first day. Some nonsense was said by one of the boys, but nothing preventing us all from doing our activities. During the session different boys came in to help and get supplies. This day was pretty successful.

2/20/98

The second day I arrived at the campus greenhouses. When I got there, everybody was done with the gardens and greenhouse tour already so we all loaded up and went back to the school. There we did a check-up of the greenhouse to see how things have been kept up and maintained. One of the other volunteers and I noticed some plants weren't looking too good and asked the boys about it. One boy mentioned that their teacher was suppose to water the plants but hasn't been. We talked with them about how this was their greenhouse too and should also take care of it. The whole point of maintaining and nurturing these plants is to have something in life to care about and it's beneficial to them to be a part of it. The boys had brought back certain cuttings they chose and we potted them up. One boy brought back a geranium cutting with a big flower on top. I told him that the flower was pretty, but in order for his new cutting to stay healthy and grow, he would need to snip off the flower bud to promote growth. I believe he kept the flower after he cut it from the plant. I mainly worked with Todd\* and Mike\* in the greenhouse. Mike brought back a “Tillandsia” plant that can be attached to wood and grows from that

when soaked in water. I helped him wire the cutting to the wood and we soaked it.

Mike\* was talking about how he was really interested in tropical plants and that is one of the reasons he made the “Tillandsia” cutting. From what I’ve seen so far of the boys, Mike\* seemed the most interested to learn new and different things about plants and caring for them. After we wrapped things up for the day, one of the teachers, called us inside the building for a discussion. He told us that he appreciates our volunteer work and contributions we’ve made so far to these boys. But, he also mentioned that even though we’re forming a bond with them, we still need to recognize our positions as volunteer and needed to point out when the boys are acting out or swearing or being disruptive in some way. That’s when he brought out all of their behavioral charts and evaluation folders, and told us that we needed to be keeping tabs on them just like the teachers do. Another teacher, (the school administrator) as one of the volunteers if Todd\* had been swearing or disruptive and the volunteer said that a “damn” or “shit” were occasionally said but nothing too aggressive or distracting to prevent us all from staying focused and doing activities. The teacher who first called us in mentioned in our discussion that the first day was absolute hell for the boys and it might take a few sessions to get them interested. I completely disagreed with that statement since I was there with the boys doing hands-on discussion and they were interested. He was making an assumption based on the way the teachers view these boys. I got more from (this teacher) than what he was just saying upfront. It seemed the teacher’s views were like “once a delinquent, always a delinquent”. Just his attitude and how he was discussing with us rubbed me the wrong way a bit. But I simply thought that we already proved these teachers wrong by what happened with us and the boys the very first day-the teachers just didn’t get to see it.

2/27/98

When I arrived at the school and inside Tim\* and Todd\* were working on filling out practice job applications. I personally worked with Tim\* to help him sort ideas for what to write down. This was the first time I was exposed to someone with such spelling problems. It was also like pulling teeth to get him to actually write anything down. Even for certain questions that he had something to put down, he didn't like what he had to write down. For example, there was a question about experience with gardening/horticulture and Tim\* said that he used to work for this guy on his farm doing certain tasks. I had to get it out of him what exactly he did there but he was being lazy in recalling his duties. When he finally told me, he didn't think that the jobs he performed were significant enough to put down on the application. I let him know that when one is trying to get a job, any and every experience relating to the applied job or just experience in any past job is significant, necessary and important. I said it makes him look more like a qualified, hard-working interested applicant if he writes all of his experiences down.

After Tim\* filled out the application I took him into another private room to give him a practice interview. I asked the usual, basic questions that any boss would ask: "What has been your past job experiences?", "What can you contribute to this company?", "When are you available to work?", "What education have you had so far?", "Why do you want this job?"

Tim\* answered them simply and accurately and I thought he did just fine with it. After the interview we went back into the other room to look at example resumes. I pointed out the basic facts about what to list. I mentioned again that the more you write down about experiences and qualifications, the better you look as a potential employee.

One needs to have education, any degrees earned, volunteer work, jobs, hobbies and any other piece of info. To show you're a well-rounded interested person. After we finished looking over the resumes, I started helping Mike\* fill his job application. I was asked to go in a separate room with him to do this. Before we started, one of his teachers talked with me privately about how Mike\* has a big problem spelling and that I need to assist in filling the application out. I have never worked with someone with a spelling disability so I was a little uncomfortable handling this. I didn't want to just give him all the answers either. Before Mike\* and I continued the application, I went to ask his teacher how I should handle this problem-do I just spell it for him? He said to just wait until Mike\* asks me for help. But the application process took awhile because he was having extreme difficulties spelling basically every word, even short conjunction words, etc. We eventually got through the first page and then another volunteer took over because I had to go to my noon class. As far as the applications they filled out, I don't think it was the fact that they weren't interested or didn't care about doing it, I think since some of them had a certain degree of spelling difficulties that they were embarrassed about and it was interfering with what they wanted and needed to do, which was the job applications. They knew it was for their benefit, but from what I experienced with the boys I worked with, they didn't think they could do any of it or what they had to write down was insignificant. I tried as much as much as possible to build up their confidence about the activity without looking like I was being sympathetic or something.

3/16/98

I arrived at the school at 9:30 and a girl from the Horticulture Therapy class came to discuss Landscape and Garden Design. It was set up in a basic way so the info. would

be easy to understand and interesting. She also brought in gardening and design books for us all to look through and so the boys could get ideas about the design they are going to do for their school. We also sketched out practice designs of where certain plants and paths, etc should go. This time was just sharing ideas about designing their landscape and brainstorming. The other volunteer and I flipped through the garden books and pointed out good groundcovers and types of designs we thought were aesthetically pleasing. We all made it a point to the boys that picking out these plants should be what they like and think are functional in their particular garden space. The only problem I saw with his activity was that these boys probably didn't know about certain trees, shrubs, etc. to be able to make a decision of why that particular plant would be good in their garden besides being pretty. It wasn't made clear to me if I was suppose to be informing them of certain plants and benefits of them. I don't know too much myself except what I've learned in Indoor Plants class and Home Hort. class, so I mentioned plants I happened to know about (example: benefits of groundcover plants). After this design activity, the other volunteer and I went into the other room to listen to the other speaker, a master gardener, who came to speak about composting. This man knew his stuff and made us all pretty interested in what he was showing us. He brought in different stages of compost and pictures, and flyers to read. A main overall factor with the composting was that it is a gradual process and in order for it to be successful, knowledge and nurturing need to go along with it ( I tried to keep pointing out the care and nurturing aspect of horticulture). For random topics. Mike\* and Tom\* asked the speaker many questions about compost and really seemed to like him because he made things energetic and fun. He also made things basic so they weren't overwhelmed by too much information. After the compost

demonstration, we all drove over to the community center to look at the boy's site. It was a really small area so I thought it would be a good start for them. By this time in the day, the boys were getting distracted and restless, but were doing a little clean up of the area. We pulled some weeds, cleared out dead leaves, stabilized the compost bins, etc. I was having trouble putting the little door on the compost bin because it was warped so, Tim\* and Ray\* helped me push the bins in the best possible position. The master gardener speaker also joined in to help. The boys really got restless and fooled around when the project coordinator was trying to give her wrap up talk. I guess these boys need a lot of hands on activities to stay focused. Listening and staying still are a problem sometimes for them.

#### LOCAL LANDSCAPER COMES TO TALK 4/3/98

I arrived at the landscape site a little late (10:30). The speaker was there to talk with the boys about pruning trees. We also were raking and clearing out dead leaves from the ground cover around the building. One of the boys and I picked weeds together and another boy eventually helped too. I noticed Tom\* kept sitting off to the side and doing nothing but the speaker got him to start helping again. With the tree pruning, the speaker was showing techniques of heading back and thinning out branches. We all then went on campus to plant bushes. At first the boys teacher and some of the boys disappeared for a few minutes when we were just getting started. They just went to get a drink but there was unloading of the plants to be done, spacing etc. When everyone was together again, the speaker started explaining the process of planting and spacing these bushes. The boys were listening but at times they would get distracted by Tech students walking around (especially girls). The speaker planted the first shrubs and then wanted Tom\* to try

digging for the next shrub. Just digging one hole seemed to take awhile. Mike\* took over digging the hole but was still working slowly. The boys just didn't seem in the mood for doing any physical work at this point. I guess our main problem with this activity was the lack of equipment and organization. Maybe the boys were sick of listening to the speaker the whole day. I wasn't quite sure what the problem was. I tried to ask one of the boys and he said that this was just too hard. I told him he was just being lazy, and he agreed. I over heard one of the other volunteers talking to another student and he was saying that you just don't earn any money being in school and we didn't have to waste so much time in school he'd have more money and then why would he have to learn "this stupid stuff".

I think seeing so many girls around on the campus for some reason made them focus more on getting jobs that would make them quick money, I suppose to impress girls. But it ultimately made them more lazy about what they were doing right then.

#### THE WILDFLOWER PLANTING 4/17/98

We all met at the school at 9:15 am and talked about going to the arboretum to plant wildflowers. Mike\* seemed interested in that and asked questions. The other volunteers and I met at the arboretum and the arboretum director was waiting for us there. The project coordinator and the boys went on campus. By about 10 we all met up and walked over to the truck to get shovels and other tools out. That was also the area where the wildflowers were to be planted. Our job was to turn the soil and clod it up. We had more volunteers than usual because this was a bigger task. Volunteers and all the boys, except Don\* were digging. Two of the volunteers and Don\* were collecting compost. Our total area we dug up was about 10 feet by 10 feet. Don\* wheeled the wheelbarrow

over to our area and dumped leaves and needles for us to mix up. This improved the structure of the soil. During the digging, at first it was just the volunteers and the project coordinator and the teachers digging and the boys were taking time to get tools and stuff to join us. The project coordinator urged the boys to hurry up and do the activity. The boys seemed extra distracted today. Tim\* and Mike\* kept acting up and making rude comments and wouldn't space out to work. One time they were both sitting off to the side "taking a break" but they were told to come help. Their attitudes were just bad. The claimed that learning these skills were just a waste of time. Basically I think that Tim\* didn't want to participate because Mike\* didn't, and Tim\* thought Mike\* would think he was being "uncool" if he did. We had them spread the wildflower seeds over the site so they would get involved. While that was going on, Tim\* and the boy's teacher were moving railroad ties and lining them up. Two of the volunteers and Don\* spread colored material (mixed with more seeds) over the site to mark where we planted. Everyone cleaned up for the day and sorted the project coordinator's tools and the arboretum head's tools. The arboretum head was proud of how fast we worked and what we accomplished. The project coordinator did a wrap up talk over by the picnic tables. It took a while to get everyone together. Even their teacher was distracted and came over late. The project coordinator called him over and he joked about something completely different. Mike\* sat away from us and was mad about something. The project coordinator got him to move closer a bit but he was definitely being difficult. At the end of the discussion she asked if anyone had any questions but some people were already scattering. Mike\* was already over by the truck ready to leave. I don't know what was going on with him but it might have been something between him and their teacher perhaps.

MENTOR 5:

#### TREE PLANTING AT THE SCHOOL, 4-8-98

“Today we planted trees and amended soil by the schoolhouse. An (Urban) Forestry Graduate (student at Virginia Tech) brought some trees to plant; Plum, Red Maple, and Sugar Maple. He spoke about tree planting techniques and about the differences between how the trees had been dug and held (container, balled and burlap, etc.)...Everyone (the students) were somewhat reluctant at first about doing such ‘hard work’, but once we started everything went rather well. Decisions were made (mostly with some guidance) as to where to plant each tree-based on how large each tree will get, not on present size. Everyone, including the teachers, helped dig holes...after the tree plantings (a few of the boys) helped empty rich soil from (the research project coordinator’s) truck into the planting beds, everyone helped turn it in. \*John liked being able to drive the truck back and forth...\*Bill watered the trees and then took pictures...This was a Good Day!”

#### THE END OF THE YEAR PARTY 6/8/98

“It was a very happy day, yet sad to know that it was all over for the year. I truly think that the boys ultimately enjoyed the project as a whole and all the people, experiences and knowledge they gained.

Over all, I truly feel this was a successful project. I saw a great improvement in most all the boys in several areas such as ability to stay on tasks, willingness to cooperate and attitude. I think that as a whole the boys enjoyed the project and the volunteers and activities it brought. I definitely know the boys learned and refined many skills in the

horticultural area and were rewarded by being able to get hired in Blacksburg over the summer (a tough feat) in horticulture...these boys were given a wonderful opportunity and although sometimes obstacles stood in the way of their full attention or cooperation, they utilized these opportunities to improve themselves in some way or another, each unique to himself.”

MENTOR 6:

3/13/98

...after the work today I went to the school basement with Tim\* to see his “new” experiment (the first one in the greenhouse rotted, his teacher said the seeds were old.) The new seeds were started yesterday. “Tomatoes!”, says Tim\*. Half white light and half under white and black light...I also asked him about another attachment on the electrical strip. He said it was a timer for the lights and that his teacher had helped him to hook it up...he seemed pretty into it.

4/3/98

I arrived a little late to the Local Landscapers talk. When I got there some of the boys were working and some weren't. It looked like things were going okay, but the usual effect that Mike\* had on participation seemed to be at work. If he doesn't want to do something that day nobody wants to. But if you can win him then the whole crowd will eventually follow...Some of the boys were sort of standing off to one side and I asked Tom\* what he thought was going on and he mumbled something about making more money at his uncle's junk yard than he could standing around here and something about having to do all this hard work. I tried to engage him in a conversation about learning skills for the future and being able to make more money with a little time invested in

learning skills. He still claimed that if he didn't have to waste his time here he'd have a lot more money to spend. He didn't seem to understand the idea of deferring gratification.

#### TREE PLANTING 4/8/98

A Forestry graduate student brought some trees to plant, Plum, red maple, sugar maple. He spoke about tree planting techniques and about differences between how trees had been dug and held (container, balled and burlap). He also brought a damaged bare-root tree to show the root system. Everyone (the kids) was somewhat reluctant at first about doing such "hard work", but once we started everything went rather well. Decisions were made based on how large each tree would get, (by the boys) mostly with some guidance, as to where to plant each tree. Everyone, including the teachers, helped dig holes. There was discussion about depth and diameter factors and noticing worms and good aeration, and to be careful with the B&B trees. One student took pictures today. After the tree planting, a couple of guys helped to empty rich soil from (the project director's) truck into planting beds and everyone helped to turn it in. Tim\* liked getting to drive the truck back and forth. Mike\* watered the trees and the soil in preparation for the planting to come later. This was a good day!

#### 5/ 14/ 98 INTERVIEW DAY

Interviews with the Town on Blacksburg for the internships today. One at a time they all interviewed. They seemed to really get a kick out of it all, sharing info and comments between and after interviews. All of the kids came with button down shirts and ties and each brought their own resumes.

\* All names for students have been changed

#### **APPENDIX 4: THE AEPPS ADMINISTRATION'S POST PROJECT COMMENTS**

These comments appear as presented to the researcher, and unedited from their original form.

##### **TEACHER**

“Over all, the project was very successful and thorough. Everyone knew their ‘stuff’ in relating and working with the staff and students...students (were) excited...they (the students) were affected in a positive manner, meeting others, conversing, sharing experiences, suggesting solutions, especially about attitude, and concern and caring that they achieve. Hopefully (they) will be able to use (these) experiences on possible job sites. Thanks for all you’ve done on behalf of the students and staff.”

##### **TEACHER**

Although there were some personality conflicts, the lessons empowered in a positive manner to rise above the rural/dead-end employment. Perhaps (we could make this) a semester elective.

##### **SCHOOL DIRECTOR**

“I think the project has been beneficial four our students and staff. It is important to me that our school provides opportunities for growth in several realms simultaneously, and the horticulture project enabled us to do so. Our students were able to learn specific job skills in horticulture, to explore a positive vocational choice, to develop and practice human relations skills, to work as a part of a team, to deal with diverse individuals, to follow instructions, etc.

Our school staff and hopefully the horticulture project staff/volunteers, benefited from the problem solving, teamwork, and program coordination experiences we had together. Our staff learned about horticulture, and I think we provided knowledge and expertise concerning how to work with our students. We are very interested in continuing the project next year.”

#### **APPENDIX 5: AEPPS TEACHER’S COMMENTS AT THE FOLLOW –UP INTERVIEWS**

These comments appear as presented to the researcher, and unedited from their original form.

##### **MATH AND SCIENCE TEACHER’S COMMENTS:**

Six months after the formal completion of the horticultural therapy project I have distilled out what I believe to be the real benefits of the experience for both the staff and student participants. These effects were both short-term and long. Perhaps the aspect of this project that kept the students involved and held their interest was the immediate feedback inherent in every activity. Every hands-on activity was, in a sense, a practical examination of how attentive the students were to instruction and to what extent they were engaged in the activity as a whole. Unlike a written examination where one’s performance is a private matter between teacher and student, the end product of our students’ efforts sat before the whole group to see and appraise. On a regular basis, I could hear ownership of "good work" being claimed and the blame for laxness being laid. This kind of peer feedback, combined with the daily wrap-up sessions, served to motivate each participant to take a measurable amount of pride in their efforts not seen in much of their more traditionally "academic" work. Beyond these on-site observations, the behavior of students who complete the project at times seems to have been positively modified by their experience.

Four of the students have stated the horticultural therapy project aided in gaining employment. For others, the experience serves as a reference to a time when school was "fun" and have requested some form of the program in the future. At least two mothers have repeatedly remarked that their son "still talks" about the horticulture project. Like the trees and perennials that still flourish at the school, the lessons learned seem to be long lasting. The thriving flower beds and trees on the school grounds give our returning students something to boast about. Some are proud of the hard work, others of the plants they picked out. Whether boastful or entirely without comment on their experience with the horticulture therapy project, all of our returning students continue to show an unwavering confidence in their ability to instruct our newer students in basic horticulture skills.

**ENGLISH AND CIVICS TEACHERS COMMENTS:**

The students that participated in the horticulture project that proved to both educational as well as personally self-fulfilling. The experience taught the students to work together. More importantly, to be able to work with students from Va. Tech. By coming together, the students displayed an increase in maturity, improved disposition, and skills necessary to become proficient and knowledgeable in working various areas of horticulture. Furthermore, being able to on the campus at Va. Tech . This project proved to advantageous, in that, the students worked with those responsible for maintaining the grounds on the campus of Va. Tech. The students gained a more positive self-esteem about themselves and the experience challenged the students to do things they didn't think they could do. The successful endeavor would be one that I would recommend again.

## **Catherine Palumbo McGuinn**

1014 Draper Road,  
Blacksburg, Va. 24060  
(540) 552-6184  
cmcguinn@vt.edu

---

### **Education**

*M.S. DEGREE, HORTICULTURE, Horticultural Therapy, May 1999*

Virginia Tech, Department of Horticulture, Blacksburg, Virginia

**Thesis:** An Assessment of a Vocational Horticulture Curriculum at a School for Juvenile Offenders

*TEACHING CREDENTIAL IN PHYSICAL EDUCATION, Emphasis in Adaptive Physical Education, December 1996, Exercise Science Department, University of California at Davis, Davis, California*

**Student Teaching** done with the Adaptive Physical Education Specialist for Yolo County Public Schools

*B.S. DEGREE, CONSERVATION, December 1992*

College of Forest Resources, North Carolina State University, Raleigh, North Carolina  
Botany and Education Major, 1988-1990

Salem College, Winston - Salem, North Carolina

### **Work Experience**

*CONSULTANT, June 1998-August 1998, Montgomery Co. Recreation Department for summer camp program on matters concerning children with special needs.*

*Graduate Student ASSOCIATE, August 1997-June 1998, Office of Consumer Horticulture, Virginia Tech, Blacksburg, Virginia*

- Teaching assistant, Home Horticulture Class and Horticultural Therapy class
- Maintained the *Plant-People Council* library
- Supplied information and answered request concerning Horticulture Therapy and related fields

*ALTERNATIVE RECREATION COORDINATOR, Recreation Department, Yolo County, Davis, California, March 1995-July 1997*

- Planned recreational activities for Yolo Counties youth with special needs
- Trained volunteers to work with children requiring one-on-one special needs
- Taught adapted recreational activities to City of Davis youth with special needs

*VOLUNTEER*, Sacramento-Davis Special Olympics, Track Coach, Davis, California, 1995-97

- Coached autistic, Down's syndrome, and developmentally delayed youths

*Post-Graduate RESEARCHER*, September 1994-March 1995, Urban Forestry Extension, University of California at Davis, Horticulture Department/USDA Forest Service, Pacific Southwest Research Station, Western Center for Urban Forest Research, Davis, California  
*Sacramento Shade Tree Project*,

- Teaching assistant, Urban Forestry Class/Western Species Identification Class and Plant Materials
- Trained field crews in species identification, aerial photograph interpretation, and tree analysis for the City of Sacramento

*TEACHER OF ENVIRONMENTAL SCIENCE AND ARTISTIC INTERPRETATION*, Wake County YMCA Boy's Club, Raleigh, North Carolina, 1990-92

*VOLUNTEER ART TEACHER*, Winston-Salem Arts Council, Winston-Salem, North Carolina, 1988-90

- Taught art to handicapped senior citizens and children.

## **Horticulture Therapy Presentations**

1998 Virginia Master Gardener College

VT Horticulture Club

Southwestern Virginia 1998 Recreation Conference

Poster Presentation. At 1998 International Plant-People Symposium

- paper to appear in proceedings: Towards A New Millennium of People-Plant Relations

## **Athletic Achievements**

Humbolt Redwoods Marathon 1996, 1997

California International Marathon 1997

Big Sur Marathon 1996, 1997

Marine Corps Marathon 1998