To the Graduate Council:

I am submitting herewith a dissertation written by Susan L. Wilson entitled *Visits to Public Gardens: Its Meaning for Avid Gardeners*. I have examined the final copy of this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Education, with a major in Leadership studies in Education.

Dr. Carol E. Kasworm, Major Professor

We have read this dissertation
and recommend its acceptance:

Accepted for the Council:

Associate Vice Chancellor
and Dean of the Graduate School

Visits to Public Gardens: Its Meaning for Avid Gardeners

A Dissertation

Presented for the

Doctor of Education Degree

The University of Tennessee, Knoxville

Susan L. Wilson

May, 1995

Copyright © 1995 by Susan L. Wilson
All rights reserved

Dedication

This dissertation is dedicated to my grandparents.

To John and Dorothy Wilson whose avid gardening made an impression upon me as a child and continues to inspire my horticulture education and practice thoughout my adult journey. Their lush Kentucky Bluegrass lawn, experimental rose garden, and boarder perennial garden are vivid and alive in my mind today though they are many years gone. My gardening roots are from their seeds.

To Mary Kathryn Printz whose nurturing and love helped mold me into a happy, productive adult. She brought much laughter and happiness to my childhood.

To Joseph Printz whose undying love, support, and interest in my doctoral studies motivated and inspired me to complete what I started.

I miss them all and look forward to seeing them again one day, and sharing this work with them.

Acknowledgements

Although one name appears on the title page of this dissertation, it would not be possible without the support and help of innumerable people. I would first like to thank my study participants. I will always treasure the friendships that developed with them through this study.

I would like to thank my doctoral committee members: Dr. Carol Kasworm - chair, Dr. John Peters, Dr. Kathleen deMarrias, and Dr. G. Douglas Crater. Carol guided me through each step of the process with patience and wisdom and kept me grounded in the adult education language and literature. Kathleen provided insight and direction with my data and research technique. Her kind, gentle manner provided direction and motivation when it seemed nothing made sense. The completion of this work is to her credit. Dr. Crater offered unceasing support and motivation to throughout this period of my education.

Thanks also to Angie Berry and Joy Webb whose word processing expertise and long hours of work put form to my data and words.

Special thanks also to my fellow students Jo Wood, Jill Green, and Sally Blowers who provided references, journal articles, information, and support.

Finally, the love, support, and assistance of my family were the sustaining factor through the research and writing process. The unceasing interest and love of my parents, Richard and JoAnn Wilson, kept me believing I could finish. Heartfelt thanks go to my roommate and best friend, Lisa Morgan, who had to live with the worst of me during the eight years I took to complete this work. Her undying belief,

love, and support of me helped sustain and encourage me to finish. I appreciate the comic relief and needed distractions she provided.

Finally, thanks to Ron Hamilton, my future husband, who helped me survive 'our' dissertation and made me believe we can do anything together. His love and support of me during the most stressful time of my life makes me look forward to my future with him when this is all well behind us.

ABSTRACT

This study examined how avid gardeners experience a public garden. Using an in-depth interviewing technique, this qualitative study interviewed six avid gardeners who frequently visited a public garden. The theoretical framework which guided this study included the phenomena of self-directed learning and constructivism as well as information about adult participation in cultural institutions. Data about the gardener's beliefs and actions regarding their gardening history, gardening practices, and involvement with public gardens were gathered. From this research a conceptual model of an avid gardener's world was delineated. The model reflects two major components. The first component reflects the environmental, psychological, and cultural contexts of a gardener's world. The second component reflects the dimensions of an avid gardener's world which represents their gardening experiences, practices, and education. The dimensions of an avid gardener through which they experience their gardening include: 1) social connections, 2) human well-being, 3) personal history, and 4) learning experiences. The model suggests how one thinks and acts as an avid gardener. The model is grounded in a dynamic relationship between an individuals environmental, psychological, and cultural contexts and the actions and beliefs in the four dimensions of their gardening world. The model reflects past and present life experiences, values, and other internal forces within the individual. In addition, the model reflects the external forces in an individuals life being the societal/cultural resources, beliefs, and values and social relationships, physical surroundings, and situations. The model represents the dynamic nature of a

gardener's make-up and the major dimensions in their lives which influence their gardening. These dimensions of a gardener's world are the personal learning constructs through which gardeners experience their plant world. It is through these dimensions that the avid gardeners in this study experienced a public garden. Several categories emerged within the four dimensions of an avid gardener's world. In the social connection dimension, it was found that avid gardeners used their gardening activities for meaningful social interactions with other gardeners, family and friends. Gardening activities enabled gardeners to find meaningful social interactions in volunteer work in a public garden, memberships in plant associations, visiting a public garden, and a career as a professional horticulturist. Through their gardening, avid gardeners were able to enhance their human well-being dimension. Activities of benefit to their emotional and physical well-being included visiting a public garden, physically working in a garden, designing a garden, and growing plants with success. The personal history dimension of avid gardeners accounts for their gardening past and how it influenced and shaped their gardening experiences. Positive gardening experiences during childhood sustained avid gardener's gardening interests into adulthood where continued gardening education and activities were an integral part of their lives. In their learning experiences dimension, avid gardeners used their gardening activities to expand their gardening knowledge and skill. Reading gardening material, involvement with plant associations, visiting gardens, volunteer work, work experience, and using The Agriculture Extension Service were different resources and strategies participants used to expand this dimension of their gardening

self.

As the first study of this kind, it was determined that adults do learn in a public garden. Each participant was unique in how they acted as a gardener and how they used a public garden. The uniqueness reflected their contextual past history and their present world with internal and external forces. The context provided the grounding in which they choose to act in specific dimensions of their gardening world and how they engaged in the dimensions in relation to their involvement with public gardens. Participants used a public garden to socially interact with others, enhance their human well-being, strengthen their gardening background, and extend their gardening knowledge and skill.

Future research needs to further explore this area and extend our understanding of the learning activities and strategies adults use to expand their gardening knowledge. Implications for further research and for adult education practice are cited.

TABLE OF CONTENTS

CHAPTER	PAGE
1. INTRODUCTION TO THE STUDY	**1**
Focus of the Study	2
Significance of the Study	3
Conceptual Framework	4
Chapter Summary	7
2. REVIEW OF THE LITERATURE	**8**
Adult Participation in Cultural Institutions	9
Audience Analysis	9
Participant Behavioral Studies	13
Participant Reaction & Evaluation	14
Self-directed Learning	16
Self-directed Learning as a Self-Initiated Process	18
Self-directed Learning as a Personal Attribute	20
Self-directed Learning in Non-formal Settings	23
Constructivism	25
Chapter Summary	29
3. METHODS AND PROCEDURES	**32**
Identification and Sample Selection	32
Development of the Interview Guide	33
Data Collection Strategies	35
Data Analysis	36
Chapter Summary	38
4. PRESENTATION OF PARTICIPANT'S PORTRAITS	**39**
Introduction	39
The Garden	39
The Participants	40
Formal Educational Background	41
Nonformal Educational Background	42
Gardening Career	42
Gardening Hobby	42
Participants Portraits	43
Claire Bishop	43
Gardening Background	44
Connection to Others	46
Claire as Learner	47

Visiting Gardens 47
Books and Magazines 48
The Agriculture Extension Service 48
Plant Societies 49
The University of Tennessee Trial Gardens 49
The Meaning of Gardening 51
Importance of Garden Aesthetics 52
Colleen Montgomery 52
Gardening Background 53
Connection to Others 54
Colleen as Learner 54
Visiting Gardens 54
Volunteering 55
Books and Magazines 55
The Agriculture Extension Service 55
Plant Societies 56
The University of Tennessee Trial Gardens 56
The Meaning of Gardening 58
Importance of Garden Aesthetics 59
Jonathan Tucker 59
Gardening Background 59
Connection to Others 61
Jonathan as Learner 62
Visiting Gardens 62
Books and Magazines 63
The Agriculture Extension Service 64
Volunteering 65
The University of Tennessee Trial Gardens 66
The Meaning of Gardening 67
Importance of Garden Aesthetics 68
Maddie Cooper 68
Gardening Background 69
Connection to Others 70
Maddie as Learner 72
Visiting Gardens 72
Books and Magazines 73
The Agriculture Extension Service 73
The University of Tennessee Trial Gardens 73
The Meaning of Gardening 76
Steven Taylor 78
Gardening Background 79
Steven as Learner 82
Visiting Gardens 82
Veteran Gardeners 83

The University of Tennessee Trial Gardens 83
Books and Magazines 84
Work Experience 85
Plant Societies 86
The Agriculture Extension Service 87
The Meaning of Gardening 87
William Peterson 88
Gardening Background 88
Connection to Others 91
William as Learner 91
Visiting Gardens 91
Books and Magazines 92
Plant Societies 92
The University of Tennessee Trial Gardens 92
The Meaning of Gardening 94
Chapter Summary 95

5. CONSTRUCTING A GARDENER 96
Personal History 100
Introduction to Gardening 102
Key Life Role and Learning Role in Gardening 104
Avid Gardening Interests 105
Summary of Personal History Dimension 106
Social Connections 107
Connecting Through Plant Associations 107
Connecting Through Visiting Gardens 109
Connecting Through Educating Others About the Trial Gardens . 109
Connecting Through Volunteer Work 111
Connecting Through Gardening Career 111
Summary of Social Connections Dimension 112
Human Well-being 112
Gardening and Its Beauty 114
Gardening and Its Emotions 115
Gardening as a Connection to Other Interests 119
Summary of the Human Well-being Dimension 121
Learning Experiences 122
Gardens 122
Books and Magazines 125
Volunteer Work 127
Plant Societies 129
The Agriculture Extension Service 129
Veteran Gardeners 131
Work Experience 131
The University of Tennessee Trial Gardens 131

Plant Study 134
Discovering Plants 134
Plant Identification 136
Plant Preference 137
Plant Performance 138
Learning Botanical Names 140
Learning Plant Sources 141
Use of Garden Literature 141
Comparison of Gardens 142
Garden Design 143
Plant Use 143
Visualize Ideas 145
Observe Design Elements 145
Garden Maintenance 146
Garden Aesthetics 146
Transplanting Practices 147
Labor Requirements 147
Soil Preparation 148
Summary of Learning Resources and Strategies 148
Chapter Summary 149

6. OVERVIEW, SUMMARY OF FINDINGS, CONCLUSIONS AND IMPLICATIONS 152
Overview 152
Summary of Findings 154
Findings Related to Personal History 155
Findings Related to Social Connections 158
Findings Related to Human Well-being 162
Findings Related to Learning Experiences 165
Implications for Research and Practice 172
Implications for Research 172
Implications for Practice 174
Contributions of This Study to Adult Education 180
Towards a Theory of Gardening Education 182

LIST OF REFERENCES 185

APPENDICES 192
Appendix A. Interview Guide179 193
Appendix B. Informed Consent Form 196

VITA 198

LIST OF TABLES

Table 1. Demographic Data of Participants 41
Table 2. Gardening Background of Participants 101
Table 3. Gardening Activities Which Promote Social Interactions 108
Table 4. The Personal Human Well-being Benefits of Gardening 113
Table 5. Gardening Resources and Strategies Used By Participants . . . 123
Table 6. Type of Information Learned From the Trial Gardens 132

CHAPTER 1

INTRODUCTION TO THE STUDY

Gardening is one of America's most popular activities. In 1991 The National Gardening Association reported that 80 percent of Americans participate in some type of gardening activity. They also reported that the number of gardeners under the age of 50 who purchase gardening products is increasing at a rate of eleven percent per year. In 1993, U.S. lawn and garden retail sales were $44 billion, with each household spending approximately $184 (USDA Economic Research Service, 1994). In addition to these consumer activities, gardeners pursue activities to enhance their gardening proficiency. Subscribing to gardening magazines, reading books, studying catalogs, taking educational courses, talking with Agriculture Extension Agents and consulting with other gardeners are various methods used by gardeners to enhance their interests. In addition, many individuals visit public gardens. Research indicates that eighty percent of visitors to botanical gardens come not only for entertainment and diversion, but also for education (Lewis, 1991). However, such experiences, particularly educational experiences of visitors to public gardens are unknown.

A garden can be an educational opportunity. A variety of activities, both formally designed or of a non-formal character, can be found at public gardens. Smith (1989) points out "a [public] garden should be beautiful, but it must also be useful and provide services. Providing extensive educational and informational opportunities is one way to be relevant and useful to a community" (p.15). Exploring the educational role of public gardens has received little attention in the research literature. What little research on

education about gardens and gardening exists is primarily anecdotal. However, there has been limited research educational events which attracted participants to public gardens. In fact, a great deal of descriptive information exists about attendance and participation in **formal** gardening education classes and seminars offered by a) botanical gardens, b) continuing education programs, c) colleges and universities and d) The Agriculture Extension Service. However, there is a lack of research which tries to understand and further our knowledge on the experiences, particularly the learning experiences, of visitors to public gardens. This relationship between public gardens and adult learning has not been explored in the literature.

Focus of the Study

This study sought to understand and illuminate the perceived experiences of adults who visited public gardens, how they used a public garden, what were their reported learning experiences related to the garden visits, and what was their relationship of ongoing gardening involvement to their public garden experiences.

Two key research questions framed the study:

1. How do adults experience and make meaning of a public garden?
2. How do adults describe their gardening involvement and how do they perceive their visit to a public garden to influence their gardening practices?

This study was exploratory in nature. Findings of this research should extend and deepen the theoretical propositions and understanding which have emerged from other studies related to visitors of public gardens and self-directed learning in non-formal environments. This study provides greater understanding of use of public gardens as a

medium for learning as well as elaborating self-directed learning activities within a public garden setting.

This research study was designed as a qualitative investigation, rather than quantitative inquiry which has been the traditional and dominate research approach in the horticulture literature. Quantitative researchers collect data through the use of surveys, questionnaires, and attitude inventories and provide data on statistically generalizable patterns. Quantitative inquiry examines the world from a logical positivist framework through testing of theory models with specific and limited perspectives. The qualitative approach of this study allowed for the collection of rich, thick, detailed descriptive data which, according to Merriam (1988), allows investigators to "gain an in-depth understanding of the situation and its meaning for those involved" (p. xii). According to Patton (1980), qualitative data allows investigators to "understand and capture the points of view of others without predetermining those points of view through prior selection of questionnaire categories" (p. 24).

Significance of the Study

This research is one of the first studies to consider and characterize non-formal education, self-directed learning using public gardens in the horticulture education literature. It extends the understanding of this type of learning and the characteristics about the individuals and their learning experiences. Indications are that a great deal of this type of non-formal, self-directed education goes on in public gardens (Roberts, 1990). Further, public gardens generally make significant financial investments to develop an appreciation for plants by their visitors and provide them a meaningful

educational experience. Such an example is the newly established Western North Carolina Arboretum. They have committed a $6.2 million dollar start-up budget to invest in plants and other items for developing a rich learning environment for their visitors (Briggs and McDevitt, 1989). Thus, this study and other future studies of this focus can aid both current and future development of public gardens and related educational programs.

This study informs the practitioner community as well as those in research about non-formal gardening education. It broadens adult educator's knowledge base related to non-formal education and self-directed learning. Such information is beneficial to those who practice in both the adult education and horticulture fields by providing insights which could influence policy, practice and future research. In addition, the qualitative approach to this study advances the knowledge base of adult education and horticulture. Merriam (1988) supports this notion by stating that qualitative research:

> offers insights and illuminates meanings that advance a field's knowledge base. These insights can be construed as tentative hypothesis that help structure future research. Educational processes, problems and programs can be examined to bring about understanding that in turn can affect and perhaps even improve practice. (p. 32)

Conceptual Framework

There has been a growing body of research literature (Brookfield, 1984; Mocker and Spear, 1982) which demonstrates that learners can and do learn on their own, define their own learning goals, control their mode of learning, and evaluate the value, credibility, and applicability of the learning outcome.

This type of learning is described in the literature as self-directed or self-initiated

learning. In non-formal education settings such as learning in public gardens, self-directed learners can have maximum control over the context and methods of learning and can reflect upon their self-directed learning activities.

Public gardens have been identified by Carr (1985, 1992) as cultural institutions that provide rich learning resources for self-directed learners. He notes that libraries, museums, zoos, famous homes, botanical gardens, forest preserves and aquariums are examples of cultural institutions frequented by millions of visitors. Most important to these visits, " these institutions can be useful for learning, continuity with the past or for pure pleasure" (Carr, 1985, p.51). Yet learning in a cultural institution, such as a public garden, is different from a formal classroom activity. Kelly (1963) suggests that the act of "construing" is the basis of the learning experience in non-formal settings. It is interpreting or framing an experience and giving it shape and/or meaning. This act of construing, "of construction [of meaning], is a basic process of self-directed learning in cultural institutions, where information is generally available to learners without an implied path or design" (Carr, 1985, p. 55). Because many of these learning opportunities are not formally directed by an instructor, cultural institutions require the learner to reconstruct or repattern the information for meaningful learning. For Carr, "learning in cultural institutions means framing private meanings out of public encounters" (p. 55).

Constructivism is concerned with how people individually make sense of their worlds and how they create personal systems of meaning that guide them throughout their lives (Candy, 1991). It is a different view of how people make sense of their realities.

Constructivism is an invaluable conceptual tool for adult education practitioners. It has flexibility and explanatory power that helps us understand the phenomena of adult learning. It is central to understanding learning and specifically self-directed learning.

In his theoretical examination of self-directed learning, Candy maintains that learning consists of the construction of personal meaning and the assimilation of new information, attitudes, and skills into the existing framework of personally meaningful constructs. This personal construct system is the repository of what an individual has learned (Candy, 1982, p.56). Because of their personal construct system, different learners do not share the 'same' experience. Individuals only experience their own awareness of a situation. These personal construct systems of each individual are subject to extension or elaboration and revision (Kelly). Learners can undergo transformations in their personal perspectives through the learning process. Thus, learning can be a two part process: construction and reconstruction of personal meanings. Constructed learning forms meanings, values, skills and strategies; reconstructed learning transforms meanings, values, skills and strategies (Candy, p.64). Although few authors seem to have explicitly acknowledged the parallels, Candy feels that in many ways, constructivism is closely related to our understanding of self-direction. He feels that "learning consists of subsuming new ideas, experiences, and skills within existing cognitive frameworks. Since such frames of reference are inherently individualistic and idiosyncratic, all learning, both as a product and a process, is in a sense self-directed" (p. 246). Learning through a public garden experience can be understood as constructing personal meaning through acts of self-directed learning.

Chapter Summary

The purpose of this study was to explore the meaningful experiences of adult visitors to a public garden. Previous research on learning and gardening has not focused on the meanings visitors have attached to their experiences at public gardens. The phenomena of self-directed learning as well as constructivism were used as the conceptual framework to guide this study. The specific research of this study addressed how adults experienced a public garden, how they described their gardening involvement, how they perceived their visit to a public garden to influence their gardening, and how they described their experience as a learner in a public garden.

CHAPTER 2

REVIEW OF THE LITERATURE

The purpose of this study was to examine the experiences of adult visitors to a public garden and how they learned from a garden. Since no research has been done in this area, this study gathered data to specifically try to understand and further illuminate what little is known about adults who visit public gardens, how they use a public garden, and what they gain by their visit related to their gardening involvement.

Because of limited research on public gardens, a broad review of literature of adult participation in cultural institutions was chosen to frame this research study. This review examined past empirical research describing adult participation in cultural institutions and their experiences. This literature spoke to a variety of cultural institutions including libraries, museums, zoos, famous homes, botanical gardens, forest preserves and aquariums.

Three areas of research literature examining adult participation in cultural institutions were reviewed to frame this study. Studies which identified characteristics of adults who participate in cultural institutions was one area of literature reviewed. A second area of studies documented adult participant's behavior, and the third area of studies examined reaction and evaluation of participants to particular exhibits. In addition, there have been a few studies included which examined the learning outcomes of participants. Because non-formal education and learning in cultural institutions such as public gardens is predominantly self-directed, a review of the self-directed learning literature as well as literature pertaining to constructivism was also chosen to frame this

research study.

The remainder of this chapter presents the reviewed literature related to audience participation in cultural institutions: 1) characteristics of adults who participate in cultural institutions; 2) select behaviors of adults who participate in cultural institutions; 3) reaction and evaluation of participants to particular exhibits in cultural institutions; and one additional section examining the literature of self-directed learning and constructivism.

Adult Participation in Cultural Institutions

Audience Analysis

Most cultural institutions have used survey instruments to identify and analyze their participating audience. These surveys have used two different sampling strategies: either the samples are taken from the general population, or they are taken from the in-house population. The less common strategy of the two, the general public survey, have contrasted characteristics of the museum-go'ers with those of non-museum go'ers. An example of this type study was done by Cheek (1976) in the early 1970's. He conducted interviews in respondents' homes across the country to obtain sociological profiles of zoo-go'ers and non-zoo go'ers. He sought to describe and analyze social groups (e.g., families, friends) and their motivations for spending leisure time at a zoological park or other recreational setting. Among other things, Cheek found that adults who had visited a zoo within the past two years tended to have more education and larger annual incomes, were younger in average age, and had more children under 17 years of age than

non-zoo go'ers. These data on age, income and education are similar to the visitor survey findings of many museums.

The other, more common sampling strategy of audience analysis has been the in-house survey taken during or after the visitors' stay at the institution. More than a dozen of these surveys have been done at zoos, aquariums, and museums in the past 20 years. In general, visitors were found to be educationally and economically above the average U.S. citizen. The visitors visited most commonly as a family group (3 or 4 people); and they represented both local and out-of-town visitors, with seasonal variations. The length of a zoo visit usually lasted two to three hours, while the average length of stay at an aquarium was somewhat less, because aquariums are usually smaller places. Similar demographic and sociological profiles were found for in-house surveys for zoos, aquariums and museums. However, whether or not the same people visited similar institutions remains unknown (The San Diego Zoological Society, 1974; Cheek, 1976; Kellert, 1979; Wolf and Tymitz, 1979).

Other aspects of in-house surveys have explored why visitors come and what their expectations are. Data of past studies have suggested that visitors expect to see a special collection - one of a cultural, aesthetic and significant nature. These adults reported attraction to the unusual - most exotic, biggest, most dangerous or famous. Celebrities such as "Ziggy" the elephant were inquired after by name just like "Hope" the diamond. Visitors to cultural institutions also generally expected a recreational benefit but often cited education as a factor, too. They stated they came to zoos to show the animals to their children, learn about the animals, socialize within their group, enjoy the outdoors

and watch other people (The San Diego Zoological Society, 1974; Kellert, 1979).

In addition to descriptive statistical surveys, there have been several studies of visitors using interpretive or varied research collection strategies. Franz et al. (1990) conducted a qualitative survey through phenomenological interviews in the context of a national park. They studied the expectations and experiences of summer visitors to the Great Smoky Mountains region. Not only was the context of this study different but also the nature of the inquiry. Franz et al. felt such phenomenological techniques allowed for clearer and more detailed description of the expectations and experiences of visitors. Thematic analysis revealed that individuals who visited primarily for either a "nature-oriented" or "tourism community-oriented" experience possessed differing expectations and perceptions of the Great Smoky Mountain region.

Wolf and Tymitz (1979) conducted 300 "naturalistic evaluation" interviews at the National Zoo. Their naturalistic evaluation consisted of exit interviews combined with observation. They characterized zoo visitors as curious, interested and generally satisfied with their zoo visit. Their report included many recommendations and implications for improving visitor education, such as providing for specialized learning through a more varied approach to interpretive labels, using zoo guides and keepers to interact with visitors, and making available more written materials to emphasize different aspects of the collection. Wolf and Tymitz suggested future studies should examine the areas of visitor profiles, preferences and learning outcomes.

A similar study by Schulhof (1990) was done on visitors to a native plant garden at The North Carolina Botanical Garden. Data analysis of visitor exit interviews,

unobtrusive observation and visitor-employed photography revealed that visitor expectations strongly influenced response to the exhibit. Visitors who claimed an interest in native plants, ecology or natural history, or who came to the garden to "learn" expressed greatest appreciation for the habitats. Conversely, visitors lacking such special interest or knowledge, or who came to the garden to stroll and "see pretty things", were the most likely to be puzzled by the unfamiliar habitats and to respond negatively. Schulhof felt these findings indicated that a naturalistic exhibit of native vegetation is an unexpected, unfamiliar, or even unwelcome type of botanic garden feature for a significant number of visitors. Further, these findings underscored the importance of providing interpretation which anticipates and ameliorates possible visitor confusion or disappointment. A botanical garden should provide information necessary for visitors to appreciate and understand the habitat exhibit's unique message and purpose.

Some museums and zoos report having conducted repeated surveys for audience analysis trends. While the one-shot approach can provide valuable information for decision making, repeated reviews have revealed even more significant data. Brookfield Zoo surveyed visitors from 1976 to 1979 and found some interesting trends in the relative numbers of out-of-town visitors, the length of visitors' stay in the park and average dollar expenditures (Serrell, 1977). Possible causal factors, such as the gas shortage or increased publicity efforts, were related to these data. Such comparisons through audience analysis helped strengthened the zoo's case for increased local tax revenues and have been successfully used in gaining the trustees' cooperation for new programs.

Participant Behavioral Studies

Visitor behavioral studies, which collect data on what visitors are actually doing at cultural institutions, has received much attention in the visitor studies literature. These studies have examined how and where visitors spend time, whether or not they read the labels, and what type of social interaction takes place.

Behavioral data have been gathered about visitors as they move through entire buildings, or sequences of exhibits, and as they relate to specific areas of exhibits within institutions. For example, an overall time/motion study was done at the Shedd Aquarium where visitors were tracked throughout the galleries and timed as they walked by individual exhibits. The building's architecture encouraged a continuous counterclockwise traffic flow into and out of the six cul-de-sac galleries lined with exhibit tanks. Visitors were found to spend more time at the beginning than in the last three galleries, showing that the phenomenon of "museum fatigue" has its analogue in an aquarium. Data showed that visitors spend more time at larger tanks and with exotic species than at small tanks with less familiar or less exotic species. These data were useful as baselines from which to compare exhibits after improvement. These data also served as objective evidence of visitors' needs for orientation and comfort.

In two separate studies at the National Zoo, visitors were observed unobtrusively as they walked and stopped in specific exhibit areas of the lion/tiger section and along the Crowned Crane Trail. In addition, they were engaged in brief interviews. The purpose of these studies was to see how visitors were using the exhibit areas to get empirical evidence about label reading, and to see how self-guiding materials were being

used. The most popular or well-read signs in the lion/tiger areas seemed to be those that involved readers with questions or information they could relate to in the animals' enclosure (Kwong, 1977).

Behavioral studies at Brookfield Zoo have been part of an ongoing tradition. The zoo's exhibit philosophy has been to focus on animal behavior, including the antics of the zoo's most numerous species, Homo sapiens. Brennan (1977) observed the behavior of several different social group types (e.g., adults only, parents with children) and recorded their movements, space patterns, and other interactions such as talking, pointing, touching and sign reading. Data were collected at two exhibits and at one non-exhibit setting. He typified zoo visitor behavior as being intensely intra-group -- the group members shared experiences through physical and verbal exchanges with each other and the exhibits, rarely ever interacting with strangers, but allowing close proximity with unfamiliar groups or individuals. He found that groups moved in loosely spaced formations between exhibits where children took the lead and parents played "rear guard." At exhibits, groups became more tightly knit as the adult female navigated the stroller and the adult male interacted with the children. His study suggested ways the zoos could facilitate social group interactions, promoting more adult-child participatory activities and increasing contact between groups and zoo staff for information exchange.

Participant Reaction & Evaluation

Cultural institutions are also interested in finding out what their visitors are learning. There is a small but growing collection of studies describing the influence of

different variables on visitor attention and the value of various educational devices for casual visitors and for school groups.

There has been a wealth of information in the museum research literature on labels and how well they interpreted information for visitors. In separate studies, Rabb (1969), Serrell (1979) and Pliskin (1980) attempted to discover what factors were responsible for attracting and holding visitors' attention to zoo labels. Factors such as design, position and content were systematically varied, and visitors' responses were noted. Catchy titles, large print and information that directed visitors' attention to the exhibit at hand were found to keep their attention longer. However, attempts to show actual differences in learning have been inconclusive or incomplete.

Reque and Wilson (1979) from the Shedd Aquarium found that students learned more when they used a self-guiding booklet as they went through the aquarium. Control groups, pre- and post-testing, and formative and summative evaluation were all a part of their experimental design.

In a different context, a study by Hayward and Larkin (1983) addressed the issues of visitor experience and exhibit effectiveness at an outdoor history museum, Old Sturbridge Village in Massachusetts. Their research technique for obtaining visitor experience and exhibit effectiveness was a pretest/posttest comparison of visitor perceptions of an exhibit before and after renovation. During the pretest and protest periods, randomly selected visitors were interviewed, as well as asked to respond to a questionnaire as they exited from the exhibit building. Analyses on other studies indicated that demographic variables (e.g., age, sex, income) offered little if any value in understanding visitor experiences. Therefore, most demographic questions were

excluded from their study. Their evaluation technique indicated that with the exhibit renovation, visitors did have improved experiences and a better understanding of the exhibit. Visitors' recognition of interpretive themes increased, they had a heightened "sense of community", and preference for the exhibit increased.

Self-directed Learning

In addition to the literature of adult participation in cultural institutions, literature related to self-directed learning was chosen to frame this study. This theoretical framework was chosen since cultural institutions can be rich learning resources for self-directed learners. Research in self-directed learning originated from the early work of Houle (1961), Tough (1979), and Knowles (1975). This research suggested that adults can and do learn without the assistance of an instructor or a formal class structure. Thus, these early studies and later research suggest that adults are independent and self-directed rather than learning totally through teacher directed efforts.

Many authors in the adult education literature (Brockett & Hiemstra, 1991; Candy, 1991; and Merriam & Caffarella, 1991) suggest that the identification and exploration of learning projects by Allen Tough (1967, 1979) drew international attention to this learning phenomena. Tough's research offered a comprehensive description of self-directed learning and it's processes. Tough defined the concept of learning projects as:

> a series of related episodes, adding up to at least seven hours. In each episode more than half of a person's total motivation is to gain and retain certain fairly clear knowledge and skills, or to produce some other lasting change in himself. (1971, p.6)

He found that the "typical" adult had been involved in eight different learning projects

during the year prior to his interviews and that each had spent approximately 104 hours on their learning project. Tough's original research uncovered the fact that nearly 90 percent of adults are engaged in learning projects, 70 percent of which are planned by the learners. The first operational definition of self-directed through learning projects served as the basis for a number of subsequent studies which verified and described the phenomenon. Inquiry into the nature and processes of self-directed learning continues to grow, as evidenced by the number publications within the last few years (Brockett and Hiemstra, 1991; Caffarella and O'Donnell, 1989; Candy, 1991; Confessore and Confessore, 1992; Garrison, 1992; Grow, 1991; Hammond and Collins, 1991; Long and Associates, 1992).

Because of the significant number of investigations done in self-directed learning over the last 15 years, there has been a proliferation of definitions for self-directed learning and a growing debate regarding the conceptual understanding of the phenomena. Caffarella (1993) suggests that in synthesizing the past work of self-directed learning there are three principal conceptualizations of self-directed learning. One major conceptualization considers self-directed learning as a self-initiated process of learning that stresses the ability of individuals to plan and manage their own learning. A second conceptualization suggests that self-directed learning is an attribute or characteristic of learners with personal autonomy as its hallmark. Lastly, the third conceptualization of self-directed learning considers it as a way of organizing instruction in formal settings that allows for greater learner control (Brockett and Hiemstra, 1991; Caffarella and O'Donnell, 1989; Candy, 1991). This study will draw on the first two conceptualizations of self-directed learning as a process and self-directed learning as a personal attribute.

In addition, this section will discuss a review of significant qualitative studies related to self-directed learning in non-formal settings.

Self-directed Learning as a Self-initiated Process

Self-directed learning is most frequently used to describe a form of study where people take primary responsibility for initiating, conducting and evaluating their learning. Numerous descriptive studies have verified the existence of this form of learning, as suggested through Brockett and Hiemstra (1991), Candy (1991) and Merriam and Caffarella (1991). These studies illustrate that diverse adult populations engage in self-directed learning. For example, Coolican (1974) who studied mothers of young children, Hiemstra's (1976) study of older adults, Bayha (1976) who studied farmers and Peters and Gordon's (1974) study of urban and rural adults all found a high incidence of self-planned learning projects among their subjects. From a national survey of adults of 18 years of age and older, Penland (1977) found that most adults conducted at least one self-planned learning project a year. As Merriam and Caffarella (1991) point out from these significant number of studies, "although there is disagreement on the amount and type of self-directed learning that goes on in the general population, we can say without reservation that the existence of self-directed learning as a form of study has been established" (p.209).

In addition to studies which have verified the existence of self-directed learning as a form of learning, other studies have focused on how adults go about planning and carrying out their self-directed learning and what resources they use in the process. From the numerous studies of the self-directed learning process (Long, 1992; Merriam

and Caffarella, 1991), three very different descriptions of how adults go about this process have emerged. Merriam and Caffarella (1991) note many studies conceptualizing the process of self-directed learning as linear where adults sequentially decide what they want to learn, formulate goals, and then select learning activities, resources, and ways to evaluate their learning. This linear process mirrors the instructional processes in formal settings.

A second conceptualization of the self-directed learning process suggests a lack of planning or linear steps to the process. As Caffarella (1993) points out, "there is an emphasis on opportunities that people find within their own environments or on chance occurrences (p. 28). Studies which have investigated this notion emphasize that adults do not plan exactly what they want and where and when they are going to learn (Berger, 1990; Candy, 1991; Danis and Tremblay, 1987; Spear and Mocker, 1984). Rather, the learning process is more accidental in nature and many times a series of trial-and-error occurrences. Adult learners rarely plan their self-directed learning activities in advance. These studies found that learners will follow numerous paths and use a variety of strategies when learning on their own. As Caffarella (1993) points out, "this does not mean that there is no pattern to their learning, but the patterns vary from person to person and learning project to learning project" (p.28). These studies suggest "the enormous complexity and unpredictability of a learning effort" (Candy, 1991, p. 172).

A recent study by Cavaliere (1992) has provided a third conceptualization of the self-directed learning process. In her study of how the Wright brothers learned to fly, she identified five specific stages of self-directed learning which include; 1) inquiring (a need to solve a problem), 2) modeling (observing similar phenomena and developing a

prototype model), 3) experimenting and practicing (continuous refinement and practice with the model), 4) theorizing and perfecting (perfection of their skills and the product), and 5) actualizing (receiving recognition for the product of their learning efforts). According to Caffarella (1993), Cavaliere's model "is the most sophisticated data-based model of how adults learn and is especially useful in that it describes not only the stages of the learning process but also the cognitive processes used throughout a major learning endeavor" (p. 29).

Self-directed Learning as a Personal Attribute

Fewer studies in the literature have focused on self-direction in learning as a personal characteristic of the learner. The central assumption underlying research on learner characteristics is that learning in adulthood means growth in self-direction and autonomy (Candy, 1991; Chene, 1983; Kasworm, 1983; Knowles, 1980). Studies in this area have investigated learner's characteristics and style of self-directedness. Specifically they have attempted to identify relationships between self-directedness and readiness for self-directed learning, educational level, personality factors, learning style, locus of control, field independence and field dependence, life satisfaction, creativity, and autonomy (Caffarella, 1991; Brockett and Hiemstra, 1991). As Merriam and Caffarella point out from the synthesis of this research, "findings from these studies are confusing and contradictory at best" (p. 215).

The notion of readiness and the concept of autonomy have been studied and discussed most often in the self-directed literature as a personal attribute. Guglielmino (1977) has provided the most widely used definition of this idea. She has identified eight

factors people must possess to be considered ready to pursue self-directed learning. They include; 1) openness to learning, 2) self-concept as an effective learner, 3) initiative and independence in learning, 4) informed acceptance of responsibility, 5) love of learning, 6) creativity, 7) future orientation, and 8) the ability to use basic study and problem-solving skills. These factors are the basis of her Self-Directed Learning Readiness Scale (SDLRS), designed to determine adult readiness for self-directed learning. Numerous studies (Torrance and Mouran, 1978; Hassan, 1981; Brockett, 1985; Caffarella and Caffarella, 1986; Guglielmino and Guglielmino, 1988) have used this scale. As Merriam and Caffarella (1991) and Hiemstra and Brockett (1991) have pointed out, studies using the SDLRS have not been without controversy. Questions about the validity and reliability have prompted much debate in the literature. Further studies on the SDLRS are needed to resolve these questions.

Autonomy and its relationship to self-directed learning has been discussed in the literature primarily at the conceptual level. Several in the literature (Chene, 1993; Candy, 1991; Brockett and Hiemstra, 1991; and Garrison, 1992) have described their view of autonomy and learning. Chene describes three major elements present in an autonomous learner: independence, the ability to make choices, and the capacity to articulate the norms and limits of a learning society. Candy adds to Chene's notion of the autonomous learner by characterizing autonomous people as those with a strong sense of personal values and beliefs. These values and beliefs give them solid foundation for conceiving goals and plans, exercising free choice, using rationale reflection, having the will power to follow through, and exercising self-restraint and self-discipline (Candy, 1991, p. 125).

Challenges to these concepts of autonomy and self-directed learning exist in the literature. As an example, Boucouvalas (1988) agrees that autonomy is an important learner characteristic but argues that it should be joined with interdependence and interconnectedness as important attributes of adult learners. Agreeing with Boucouvalas are scholars from the feminist tradition (Belenky, Clinchy, Goldberger and Tarule, 1986; Caffarella, 1993; Hayes, 1989; Shrewsbury, 1987). Another major challenge surrounding autonomy and self-directed learning prevalent in the literature, is that the choice of being self-directed and acting in an autonomous manner in a learning situation is not an all-or-nothing position (Cafferella, 1991; Kerka, 1994). Debate primarily from authors who support the notion that self-direction and autonomy are key characteristics of adult learners, argues that even adults who can or want to be self-directed in their learning may choose not to exhibit or pursue this characteristic at certain times (Brockett and Hiemstra, 1991; Candy, 1991; Pratt, 1988). Variables which seem to influence whether adult learners display autonomous behavior in learning situations are their level of technical skills, their familiarity with subject matter, their sense of personal competence as learners, and the context of the learning event (Brockett and Hiemstra, 1991; Candy, 1991; Pratt, 1988). In their "Personal Responsibility Orientation" (PRO) model, Brockett and Hiemstra (1991) consider several of these variables offering a more holistic concept of self-directed learning. Underlying their model is the notion of personal responsibility; that is, individuals assuming ownership of their thoughts and actions throughout the process. The PRO model links both the process itself and the personal characteristics of the self-directed learner. Linking these two ideas together allows for the inclusion of both the external characteristics of the instructional process

and the internal characteristics of the learner.

Another way of considering self-directed learning is suggested by Candy (1991). He has identified four distinct phenomena which have been termed "self-directed learning." They include self-direction as personal autonomy, self-direction as the ability and willingness to guide and direct one's own learning, self-direction as the pursuit of learning outside of an institutional context (referred to as autodidaxy), and self-direction as the acceptance of responsibility for instructional functions in a formal educational context (learner-control). By distinguishing between self-directed learning occurring within a formal education setting and self-directed learning occurring outside of a formal education setting, Candy added a further distinction to the concept of self-directed learning. In contrast to Brockett and Hiemstra's Pro Model which links the various dimensions of self-directed learning, Candy argues that these dimensions are not synonymous and they should be studied as separate entities.

Self-directed Learning in Non-formal Settings

Although there have been several studies of self-directed learning in non-formal settings, three studies are more prominent in framing and informing this current research. Gibbons, et al. (1980) in their study of highly successful individuals examined self-directed learning activities and strategies which supported their level of expertise. This research group analyzed the biographies of twenty famous people and suggested a composite picture of a self-educated adult. From their findings, they identified fourteen principles of self-directed learners who actively engaged in self-directed learning in non-formal settings.

Brookfield's (1984), study of self-directed learning has also provided significant findings in our understanding of self-directed learning in non-formal settings. Using the data collection technique of open-ended interviewing, his study explored 25 independent learners' perceptions of their learning activities, particularly those located within informal adult learning networks. Like the subjects in the Gibbons, et al. study, Brookfield's participants had become acknowledged "experts" in their fields without formal preparation. Some of the areas of expertise identified by Brookfield's sample were organic gardening, chess, fresh water fishing, bridge, horticulture, botany, and beekeeping. Length of involvement in these activities ranged from four years for a person engaged in drama production to 50 years for a beekeeper. Brookfield identified several themes from his data which included: 1) learners viewed their learning as ongoing throughout their life with no end of study identified, 2) learners did not limit their study to traditional study boundaries (they displayed an openness to learning in related areas of interest), 3) learners felt they belonged to a fellowship of learning comprising fellow enthusiasts who shared the same concerns (learners did not work in isolation from others who shared their interests). Brookfield noted that the learners in his study expressed both a spirit of cooperation and competitiveness and that the opportunity for competition was a primary reason for undertaking their learning endeavor.

Unlike the two above noted studies, Leean and Sisco (1981) looked at the influence of learning on the lives of their participants across a chronological progression of time - past, present, and future. Examining self-directed learning from past, present and future, a holistic view of self-directed learning in non-formal settings was suggested.

Their findings included: 1) learning is part of everyday living where people are continually challenged by their environments to solve problems and explore interests, 2) thinking occurs when people are alone, 3) before learning in a self-directed manner, people visualize the learning goal completed, 4) people learn much more outside of a school context through self-directed learning, 5) the amount of formal education is not correlated to one's cognitive abilities, 6) self-directed learning is directed by innate abilities of thinking and problem solving, 7) adult developmental theory can help explain adult learning, and 8) learning resources and information services for rural learners may be beneficial in certain situations (Brockett and Hiemstra, 1991, p. 88).

Constructivism

Literature related to constructivism was also chosen to frame this study in addition to self-directed learning and adult participation in cultural institutions. Constructivism was chosen since cultural institutions can be rich learning resources but most information is available with no implied path or design and learners are forced to construct their own knowledge. There is a growing body of literature related to constructivism but few in the literature have linked it with the adult education literature, specifically with self-directed learning. Candy (1991), in his conceptualization of self-directed learning is one of the first to draw upon constructivism as an explanatory framework of self-directed learning. Instead of seeing learning in the traditional view where learners are passive beings who respond to stimuli and learning is merely the appropriation of previously devised labels and categories, Candy sees learning as "an active process of constructing meaning and transforming understandings" (p.251). He calls this concept of learning

'constructivism'. It is the opposite view of objectivism, empirical realism, and essentialism. Knorr-Centina (1981) explains that "to the objectivist, the world is composed of facts and the goal of knowledge is to provide a literal account of what the world is like" (p.1). And Gergen (1991) adds: "Modernism was deeply committed to the view that the facts of the world are essentially there for study. They exist independently of us as observers, and if we are rational we will come to know the facts as they are" (p.91). Constructivists are committed to the contrary view that what we take to be objective knowledge and truth is the result of perspective. Knowledge and truth are created, not discovered. Constructivists endorse the claim that, "contrary to common-sense, there is no unique real world that preexists and is independent of human mental activity and human symbolic language" (Bruner, 1986, p. 95). Candy suggest that this shift in perspective, from viewing knowledge as something external to be mastered to an internal construction of meaning and understanding has become what is called the constructivist paradigm. He concludes that in this view:

> learners are not passive beings who respond to stimuli, and learning is not merely the appropriation of previously devised labels and categories. Instead, learning is an active process of constructing meaning and transforming understandings.(p. 251)

Another way to consider constructivism is suggested by Guba and Lincoln (1989). They offer their "constructivist paradigm" as a broad, complex framework in contemplating constructivism. They suggest that what is real is a construction in the minds of individuals and that there are multiple, often conflicting, constructions, and all are meaningful. For Guba and Lincoln, the question of which or whether constructions are true is sociohistorically relative. Truth is a matter of the best-informed and most

sophisticated construction on which there is consensus at a given time. Constructions are resident in the minds of individuals. According to Guba and Lincoln: "They do not exist outside of the persons who create and hold them; they are not part of some objective world that exists apart from their constructors" (p.143) As outlined by Schwant (1994), the properties of constructions by Guba and Lincoln are:

1) Constructions are attempts to make sense of or to interpret experience, and most are self-sustaining and self-renewing.

2) The nature or quality of a construction that can be held depends upon the range or scope of information available to a constructor, and the constructor's sophistication in dealing with that information.

3) Constructions are extensively shared, and some of those shared are disciplined constructions, that is, collective and systematic attempts to come to common agreements about a state of affairs, for example science.

4) Although all constructions must be considered meaningful, some are rightly labeled malconstruction because they are incomplete, simplistic, uninformed, internally inconsistent, or derived by an inadequate methodology.

5) The judgement of whether a given construction is malformed can be made only with reference to the paradigm out of which the constructor operates; in other words, criteria or standards are framework specific, so for instance a religious construction can only be judged adequate or inadequate utilizing the particular theological paradigm from which it is derived.

6) One's constructions are challenged when one becomes aware that new information conflicts with the held construction or when one senses a lack of intellectual sophistication needed to make sense of new information (p.129).

Constructivism to Schwandt (1994) means that human beings do not find or discover knowledge, rather they construct or make it. They continually test and modify these constructions in the light of new experience. In viewing learning from this perspective, one accepts that no two people have the same identical experiences. Each person will construct their own unique meaning and understanding of reality. Candy

points out that this has "inescapable ramifications for evaluating what people have learned, and it also calls for approaches to research that recognize the highly individualistic nature of how people undertake learning endeavors" (p. 252).

Although Candy has theorized a model of self-directed learning which is grounded in constructivism, Carr (1985) was the first in the adult education literature to view self-directed learning from a constructivist perspective. Drawing upon his work with non-formal learning in cultural institutions, he states that "construction is a basic process of self-directed learning in cultural institutions, where information is generally available to learners without an implied path or design" (p.55). He suggests that cultural institutions require the learner to reconstruct or repattern the data encountered in order to possess it usefully in relation to inquires or interests at hand. To learn in this way is not only to construe concepts and objects in new ways, it is to design a new image of the learning self in relation to future experiences.

Both Carr and Candy credit their beliefs of self-directed learning from a constructivist perspective to George Kelly (1955). Kelly suggested in his book, Psychology of Personal Constructs, that people's psychological processes are channelized by the ways in which they anticipate events. He maintains that personal systems of meaning make up a complex structure of dichotomized constructs. These constructs come from our past experience and cause us to anticipate events and to construe experiences as they happen to us in predictable and regular ways. According to Kelly, no two people have exactly the same construct system since they cannot have identical bases of experience. Likewise, no two people construe reality in exactly the same way.

Chapter Summary

Because cultural institutions are public places for private learning, the tasks and processes of learners in them are frequently invisible, undocumented, and unassisted. Very little research or documentation exists about the frequency or amount of learning which goes on in these institutions. By examining the use of public gardens as a non-formal learning resource and the experiences of adults who do so, the conceptual framework of adult education, specifically that of self-directed learning, should be further developed and expanded. This notion is supported by Patton who feels that exploratory and descriptive data collected through qualitative research should extend and deepen the theoretical propositions and understandings that have emerged within a field of study (p. 132).

A review of the adult participation in cultural institutions literature disclosed a large number of studies concerned with adult participants and various aspects of their visit to different cultural institutions. Very few however, actually examined the nature of the adult participants experience, particularly their learning experiences. In most adult participation studies, data were collected exclusively through the use of quantitative instruments such as surveys, questionnaires, and attitude inventories. However, a few studies have taken a qualitative approach to learn more about their adult visitors. They usually combine observation along with exit interviewing. The interviewing seems to be more like having visitors orally respond to a survey or questionnaire rather than probing for their personal responses and experiences.

Since zoos, aquariums and museums, more than any other cultural institutions, ask questions about their visitors, these institutions dominate the adult participation in

cultural institutions literature. Demographic characteristics of adult participants, their motivations, likes and dislikes, traffic patterns and time spent at exhibits are some of the data being collected at zoos, aquariums and museums across the country. Only one study at a botanical garden in the review of the literature on adult participation in cultural institutions as well as public gardens was found. Such a lack of public garden research in the literature indicates a need for this study as well as others. Indications are that many public gardens conduct in-house research studies on their adult participants but have not shared this information in the research literature.

Research and theory-building efforts have documented a significant number of studies in self-directed learning. In this literature review, key studies related to process and personal attributes were discussed. Select studies which examined self-directed learning in non-formal settings suggest that learning does occur in non-formal settings. A few significant qualitative studies which examined learners who became "experts" without formal preparation were reviewed and found to be related to the nature of this study.

Constructivism and its relationship to self-directed learning were discussed. Candy's (1991) and Carr's (1985) perspectives on constructivism and self-directed learning were discussed. They suggest self-directed learning is the construction of meaning and transformation of understandings. In viewing learning from this perspective, one accepts that no two people have the same identical experiences. Each person will construct their own unique meaning and understanding of reality.

This study contributes to the adult participation in cultural institutions literature, the horticulture/public garden literature, the self-directed learning literature as well as the

constructivism literature. Being a qualitative inquiry, it differs from the majority of quantitative studies found in these literatures.

CHAPTER 3

METHODS AND PROCEDURES

The purpose of this study was to learn about and understand the experiences of adult visitors to a public garden. A review of literature including adult participation in cultural institutions, self-directed learning, and constructivism were used to frame this study. Chapter 3 presents the methods and procedures for the study. Following a description of the identification and sample selection, development of the interview guide, data collection strategies, and data analysis will be explained.

Identification and Sample Selection

Because the researcher's plan was to study adults who had visited a public garden, adults known to have visited The University of Tennessee Trial Gardens were selected for the study. The University of Tennessee Trial Gardens were chosen because of it's visibility to the public and for the large number of visitors it annually attracts. The selection was also one of personal interest since the researcher coordinates the Gardens and is very interested in the experiences of its visitors. The Trial Gardens and its purposes are discussed in greater detail in chapter 4.

The research sample for the study was a purposeful selection of six adults. The adults selected to participate in the study met the following criteria:

1. The participant was an avid gardener. For this study, an avid gardener was defined as someone who claimed they regularly worked in their landscape or garden, purchased plants, read catalogs, magazines and books, and visited other gardens.

2. The participant was a member of The University of Tennessee Friends of The Gardens.

3. The participant had visited The University of Tennessee Trial Gardens at least three times in the past year.

To keep the study gender balanced, an equal number of men and women were selected. The researcher, a board member of Friends of The Gardens, used her knowledge and contacts of its members to approach potential study candidates. Contacts were made until three men and three women met the study criteria and had agreed to participate.

Initial contact was made with candidates by phone. In the initial contact, the nature of the research study was explained. Each person was interviewed to determine if they met all criteria. If so, they were then asked to participate. It was indicated that their participation included two interviews each lasting approximately one hour, would be scheduled approximately one month apart, would be conducted in settings selected by participants and would be scheduled at their convenience. This process continued until six participants were found.

Before beginning data collection, the research study was reviewed and approved by the administration of The University of Tennessee Trial Gardens and by the University of Tennessee's Office of Compliances.

Development of the Interview Guide

An open-ended interview guide was designed to guide the participants in discussing their experiences in visiting The University of Tennessee Trial Gardens. This is similar to a phenomenological interview guide (Preissle & LeCompte, 1984) which uses the same questions and probes for all participants, but the order can be changed for

each participant. This flexibility allows the interview to proceed more naturally. The interviewer can use a response from one question to move to the most appropriate probe or next question. The interviewer checks that each question is answered during the interview, assuring that all participants are asked each question. Probes provide the opportunity to explore meanings attached to events or situations described.

The guide for this study was developed through a series of steps. Using personal work experience and the literature on public gardens and adult education, the researcher identified significant topics and wrote a series of open-ended questions. The initial interview guide was revised by members of the University of Tennessee College of Education Qualitative Research Support Group. This group of approximately ten members has met weekly since 1989 at the university to discuss and assist members with their research projects. Most members of the group are involved in qualitative research and have studied with Dr. Kathleen deMarrais, the facilitator of the Qualitative Research Support Group.

The researcher discussed the purpose of the study with members of the group in attendance and the group discussed the questions and probes, especially the initial question which would get the interview started. The researcher added several probes as a result of the discussion. After this review, a pilot study was conducted in the fall of 1992. Six individuals who had visited The University of Tennessee Trial Gardens participated in one-hour audio taped interviews. The pilot study enabled the researcher to modify and improve the interview guide as well as interview techniques and strategies. The final version of the interview guide used for the study can be found in Appendix A.

Data Collection Strategies

The twelve interviews (two interviews per six participants) were conducted within a three month period and each interview lasted at least one hour with two interviews lasting at least two hours. Interviews were conducted at settings selected by the participants. (The names of all participants and locations involved in the study were changed to ensure confidentiality.)

Each interview began with introductions and informal conversation. The participants read and signed the informed consent form (See Appendix B). Participants were informed that there were no right or wrong answers to the questions they were asked. They were asked to discuss whatever incidents the questions called to mind. The confidentiality of their responses and the use of pseudonyms was reiterated. The tape recorder was placed on the table between the researcher and participant and after an audio check, turned on for the remainder of the interview. Using Question 1 to start the interview, the researcher then continued to question and probe, using participants' responses as a basis for deciding which question seemed the most natural to follow, at the same time checking that each question on the interview guide was covered before the end of the interview.

During the interview, the researcher made written notes of gestures or any physical change in appearance which seemed relevant to the topic being discussed. The researcher attempted to make no comments or facial expressions revealing an attitude toward a response. The reactions of the interviewer were limited to smiles, nods of the head, and pauses for participants to decide whether an answer is complete. The interviewer concentrated on listening to the responses so that appropriate probes could

be generated. At the end of the interview, the tape recorder was turned off and the interviewer and participant returned to informal conversation.

The researcher had the audiotaped interviews transcribed by a transcriptionist. The transcriptionist signed a confidentiality form agreeing to keep names and places mentioned by participants anonymous. Each interview transcription for the first interview was between thirty and forty pages long, double spaced. The second interview transcriptions were ten to fifteen pages long.

Data Analysis

The process of data analysis for the interviews began during the interviews as the researcher responded to the participants' remarks and probed for deeper answers to significant responses. The initial analysis continued after each interview as the researcher orally recorded early impressions of significant remarks from the interview. The method for analysis of the interview transcripts followed suggestions by several qualitative design sources (Preissle & LeCompte, 1984; Bogdan & Biklen, 1992; MeCracken, 1988; Spradley, 1980; and Glesne & Peshkin, 1992).

After the tapes were transcribed, each transcript was read by the researcher and marginal notes were made to identify possible categories. A second reading of the transcripts by the researcher was accompanied by color-coding categories of topics which emerged. Computer software allowed the researcher to transfer quotes for each category to four separate files which were then printed for further analysis.

At this point, the researcher mailed to each participant their typed transcript and asked them to read and reflect upon its contents. Approximately one to two weeks later,

the researcher interviewed each participant again and discussed their thoughts and feelings about their first interview and what, if anything, they would like to add regarding their experience at the Trial Gardens. The focus of the second interview was to gain a better understanding of the participant and his/her experience at the Trial Gardens as well as to gain insight into any underlying beliefs, assumptions or actions by the participant. The interview guide used during each participants' second interview differed from participant to participant and was prepared in response to their first interview. In many cases, themes emerged from topics not initiated by the interview questions. Rather, the themes were topics which emerged as having significant meaning to the participants as they discussed their perceptions of their gardening experiences.

After preliminary analysis of both the first and second interview of all participants, the researcher presented data at a meeting of the University of Tennessee College of Education Qualitative Research Support Group. With the researcher guiding the discussion, the members at this meeting began the inductive analysis process of the data looking for themes within each of the four categories previously identified by the researcher. Each member of the group read through all of the quotes of one participant in each category and suggested themes from the transcript. The researcher wrote the themes suggested by each group member on a large chalkboard and the group then analyzed the themes looking for patterns and meanings. This procedure was repeated two additional times to help guide the researcher in her analysis. The resulting dominant themes, themes which all or most of the participants discussed in their interviews were then identified and those having similar meanings were clustered together forming four major groups of themes. For this study, the researcher defined these four major groups

of themes as being four 'dimensions of an avid gardener', dimensions which reflected key actions and beliefs in making meaning of a gardening world. The 'dimensions of an avid gardener' provide the framework for the data presented in Chapter 5.

The use of the Qualitative Research Support Group was important to this study. It was helpful to have members of the group read the transcripts for the first time and begin to identify themes. The group helped the researcher keep the findings grounded in the data, and by having multiple sources agree on themes, added to the internal reliability of the study (Goetz & LeCompte, 1986). Each theme identified by the researcher or a group member had to be corroborated by interview data. The group also helped the researcher initiate the inductive process, facilitating the remaining analysis by the researcher, which was done alone.

Chapter Summary

This chapter described the methods and procedures which were used to collect and analyze data for this qualitative study. The researcher prepared a phenomenological interview guide used in interviewing the six participants of this study. A second interview of the participants was done to gain a better understanding of the participants and their experience at the Trial Gardens and any underlying beliefs, assumptions and actions which stood out from their first interview. Members of the Qualitative Research Group participated in discussions in developing the interview guide and were involved in the inductive analysis of the interview data.

CHAPTER 4

PRESENTATION OF PARTICIPANT'S PORTRAITS

Introduction

The purpose of this study was to understand and explore the experiences of adult visitors to a public garden and how they made meaning of their visit. During interviews with the researcher, the participants, serious and deeply involved gardeners, discussed their experiences visiting the University of Tennessee Trial Gardens.

This chapter will present the portraits of the six participants in the study. The chapter will begin with a description of the public garden used for the study, followed by a description of the participants as a group, with a final section providing a detailed profile of each participant.

The Garden

The garden used in this study was the University of Tennessee Trial Gardens. It is a free, public garden located on the University of Tennessee Agriculture Campus in Knoxville, Tennessee. The Gardens are open during daylight hours and literature available in the Gardens describes its purpose and lists the common and botanical names of plants in the Gardens. The Gardens are designed for self-directed visitors in that no instructions or maps are offered. The purpose of the Gardens is to test and evaluate woody and herbaceous plant performance for the Southeastern region of the country.

The majority of plants tested in the Gardens are experimental trials (not available on the market) and new introductions [just released on the market] so little is known about their landscape performance. As part of the activities of the Gardens, plants are evaluated for their disease and insect resistance, heat and cold tolerance, and outstanding landscape features such as flower color, flower and fruit production, flower and foliage fragrance, bark color and texture, and foliage color and texture. Research reports are produced each year with the annual evaluations of plants in the Gardens.

The Participants

The participants in the study were three males and three females whose ages ranged from 34 to 72. Demographics about participants are presented in Table 1. (Pseudonyms will be used for all people mentioned in the study.) Each had visited the Trial Gardens at least three times the year before the study. All participants were considered avid gardeners. For purposes of this study, an avid gardener was an individual who gardened regularly, visited different gardens, regularly read garden literature and was associated with various gardening organizations. All participants were members of Friends of the Gardens. Friends of The Gardens is a support group which exists to advance and promote the purpose of the Gardens and to heighten its awareness with the public. Membership benefits include educational workshops, seminars, plant sales, and Garden lectures and guided tours by Trial Garden staff. Members contribute to the Gardens by assisting in providing guided tours of the Trial Gardens as well as volunteering in the Garden's planting and maintenance. Members assist with the

transplanting of the Garden's seedlings in the university greenhouses and then planting

Table 1. Demographic Data of Participants

Name	Gender	Age	Education	Master Gardener Program	Occupation
Claire	Female	58	Bachelors degree	yes	Professional horticulturist
Colleen	Female	44	Bachelors degree	yes	Certified public accountant
Jonathan	Male	70	Masters degree	yes	Retired school administrator
Maddie	Female	46	Masters degree	no	Professional horticulturist
Steven	Male	34	Bachelors degree	no	Professional horticulturist
William	Male	72	Bachelors degree	no	Retired engineer

them in the Garden when they are mature. Participation of members in various maintenance activities in the Trial Gardens such as weeding, dividing perennials, and pruning also contributes to their success.

Beyond the selection criteria noted above, there were other common prominent characteristics which were discovered in the interview data. These common characteristics include 1) formal educational background, 2) non-formal educational background, 3) gardening career, and 4) gardening hobby.

Formal Educational Background

This group of participants was well educated. All participants had at least a four year college degree with two having their masters degree. One participant had her

bachelors and masters degree in horticulture.

Non-formal Educational Background

All of the participants had a rich background in attending garden club and plant association lectures and seminars. Three of the participants were trained as Master Gardeners, a ten week Agriculture Extension education program which trains individuals in basic gardening principles at no cost. The Master Gardener program is offered to anyone who is interested and individuals are recruited through the newspaper, radio, and various gardening organizations. County agents, university faculty and staff, and professional horticulturists teach the twenty gardening classes including such topics as soil preparation, insect and disease recognition and control, and care of flowers, trees and shrubs in the landscape. In return for free gardening education, Master Gardeners are expected to give 40 hours of volunteer time to the Agriculture Extension Service. Volunteer service may include answering gardening phone calls in the Extension office, answering questions at lawn and garden shows, visiting homes to diagnose plant problems, and working in the University of Tennessee Trial Gardens.

Gardening Career

Three of the participants were professional horticulturists who earned their living providing gardening services. Only one participant, as already mentioned, had a college degree in horticulture. The other two gained their credentials through their work experience and self-study.

Gardening Hobby

Beyond their non-formal and formal gardening commitments, all participants

enjoyed gardening as a hobby. As a hobby, gardening was a prominent activity for participants where it consumed most of their spare time. Gardening was a hobby that these participants took seriously, seeking to learn as much as they could through a variety of resources. The gardening backgrounds of the participants were fairly similar in that all were introduced to gardening as children. Gardening has continued to be an important activity of each participant's life.

Participant's Portraits

In this portion of the chapter, portraits of the six gardeners are provided. The portraits tell the unique gardening story of each participant which emerged from inductive analysis of their interview data. Each portrait begins with an introduction to the participant followed by their gardening story which is organized into categories of gardening background, connection to others, learning resources, and the meaning of gardening. Even though participants share common threads about gardening, unique differences exist among each as will be evident in their portraits.

Claire Bishop

Claire is a fifty-eight year old, accomplished self-taught professional gardener. She and her husband were recently transferred from Ohio to Tennessee where they purchased a home with two wooded acres. She is ecstatic about the mild climate and extended growing season the South offers and is eager to learn all she can about Southern gardening.

Claire has a bubbly personality and is a pleasant, energetic conversationalist. Her interview was one of the lengthiest due to her enthusiasm and interest in discussing gardening. Her three children are grown and have left home leaving her with plenty of time for gardening at the amateur and professional level. In addition to developing her new gardens, Claire travels, lectures and writes for several professional plant associations.

Gardening Background

Claire's father introduced her to gardening early on with his own love of flowers. She described the beautiful garden she knew as a child and the way in which her father helped her build her own first garden as she began her adult life:

> *I grew up in a very small town and people planted petunias, marigolds, and geraniums. But, Dad would get the Park Seeds or one of the catalogues you know, and he'd order seed and he grew things and people all over town, the little town of about 10,000, they'd come to see Daddy's flowers. And mother she enjoyed the flowers, but it was Dad that really enjoyed them. And I remember Bill and I got married and we bought a house and Dad came out and he brought me some roses to plant, and he made the bed for me and those were our first plants in that little garden. Gardening for me, started from there.*

Math was Claire's college major, but gardening was always her passion. Being at home when her children were young, Claire never pursued work or a career in math but developed her interest and education in gardening. A friend was responsible for getting her involved in a few plant societies and the Master Gardener Program provided her formal education in horticulture. These two experiences were the springboard for Claire becoming a professional horticulturist. She described some of her professional experiences:

In Ohio I taught at the place where I worked and we had what we called Wednesday lectures, and every Wednesday I would lecture on perennials or some phase of gardening. That was at Enaswood Botanical Gardens in Columbus, Ohio. It's a 91 acre estate that was given to the parks, and their developing it. It's a pretty nice little garden. I was a math major would you believe, but I like to consider myself a lecturer, a freelance horticultural lecturer, because that's what I've been doing and I was paid for everything. I mean it was on a paid professional level in Ohio, but now I haven't found a place that I can use that knowledge so I'm just doing freelance. I've sold a few articles, what I'd really like to do is write for a paper.

In addition to being a member of numerous plant societies, Claire is a nationally-recognized judge for a daffodil as well as a hosta society. She regularly attends regional, national and international horticulture conferences. She described her extensive travels:

I was telling Bill [husband], now next spring for daffodils I start in Clinton Mississippi the second week of March and every weekend for six weeks I'm going to be gone, and I end up in Washington D.C.. I'm going to Portland, Oregon. I'm going to Cincinnati, Nashville, Atlanta, so you know the daffodils are such a short season really that you know you have to take advantage of it. So six weekends in a row I'm going to be involved in daffodils, and then this past year I had a wonderful opportunity. I got to go to England, Ireland, and Holland. I was invited over there to judge their Royal Horticulture Society shows, so that was just the icing on the cake. I really enjoyed it, so I do travel a lot. And for the hostas I went to Iowa City this past year for their national convention.

Claire enjoys growing unusual, difficult to find plants. The Trial Gardens have been a good source of such plants for her:

When I was in Ohio I tried very difficult, very hard to get, you know experimental plants and I'd like to keeping doing it. The Trial Gardens are a great source of that kind of information.

She values and appreciates new and different plants so much that this passion comes through in her lecturing:

I do a lot of lecturing and you know I always tell people "try something new each year", and sometimes things turn out you know just great. This year I tried Phloemis.

If the plants in a garden are different or new to Claire, then she can appreciate that garden. She explained her interest:

You know I can appreciate any garden. I mean it doesn't have to be something that and weeds don't bother me in somebody's garden. It's the plants that you know and their love of the plants that really gets me excited. They were talking about the arboretum here and how you know what makes a world class arboretum, and you know you can have just one specimen and if it's the best one in the world that makes it world class to me. But you know or you can have a huge collection or many many collections but it's seeing interesting plants that turns me on.

Connection To Others

Sharing gardening information and having a connection to other gardeners is something that Claire referred to frequently throughout her interview. Being involved with numerous plant associations seemed to help satisfy her desire for connectiveness. She explained her involvement:

One of the things that I'm excited about is over in Asheville, North Carolina, the Southern Appalachian Rock Garden Society meets and they meet monthly and I've been going over for that. And I mean you can get over there and back in a day and enjoy the meeting and it's put me in contact with some very, very good gardeners.

Use of the Trial Gardens was frequently mentioned by Claire as a resource for sharing and connecting with other gardeners. She explained her use of the Gardens and her feelings in connecting with others:

It's just wonderful to meet new people and you can come from all walks of life but you've got that common denominator and that's the thing that I find about the Trial Gardens over there. I love to take my friends there. People that are in that Garden, they're drawn there because of

horticulture, and as I said it's just a common denominator, we all love gardening. It doesn't matter whether you drive a pick-up truck that's falling apart or a Jaguar, you know you've all got that one common thing.

Claire As Learner

Claire is an avid, self-directed learner of horticulture and gardening and uses many resources to support these interests. Through her travels, association with numerous plant societies, reading and writing endeavors, Claire is a knowledgeable and well respected horticulturist. She has an unquenchable thirst for gardening information and believes in gaining personal gardening experience to enhance her education.

Visiting gardens. Through Claire's association with different plant societies she has had the opportunity to travel extensively and visit different gardens. She described her feelings about visiting gardens:

Those trips over to North Carolina I've been stopping at Holbrooks. That's a neat place over there to find some new and interesting plants and they've got nice display gardens there. To me display gardens teach you so much. Display gardens are very good and that's where I find a lot of inspiration for writing and so forth. I don't ever write about something that I haven't seen growing. You know a lot of writers, I think they get a lot of books and just compile what somebody else has already written. To me you've got to have some sort of personal experience. You should before you try to give advice or talk about a plant.

On her travels, even though many times very far from home, Claire shops for and purchases plants she discovers and would like to try in her garden. Through the postal service she has her purchases sent to her home:

A lot of gardeners don't realize that you can ship plants very very well these days, they've got that down to a science and the postal system has turned a lot of people off but we do have blue label shipping and UPS is very good about shipping plants and so forth. So, when I'm visiting these places even though I'm flying I feel that I can purchase you know and have them sent so when I travel I do try to make sure that I get to as

many gardens in or out or in the area where I'm staying.

Books and magazines. Claire is a well read horticulturist. She loves to read and has a passion for collecting books. When I visited her in her home I found her library consumed a whole wall of a family room. Bookcase after bookcase held the volumes of Claire's gardening library, everything from horticulture textbooks to hobby gardening books. I was impressed by the number of new books she had in her library. Claire is able to keep her library stocked with such books by belonging to a gardening book club where she monthly can review and select the latest book offerings. She described her passion for reading and how she believes in it as a vital source of gardening information:

> *I subscribe to magazines and lots and lots of books. Day before yesterday the book club thing came and there was a book in there that I have not gotten that it's I think it's either Rosemary Berry or Penelope Hobhouse on the garden in winter, and that's one of the things that I'm very interested in, structure so that the garden looks good year round. And anytime you can you know pick up just one or two ideas from a book, sometimes those one or two ideas are what really make a garden.*

The Agriculture Extension Service. Before moving to Tennessee, Claire used the Ohio State Extension Service extensively to support her gardening interests. She took her Master Gardening training through it and knew many of their personnel who she could readily call upon. When I asked her what role did the Extension Service play in her current gardening she replied:

> *Well, it should play a lot more, it really should. I used the Extension Service very heavily in Ohio, and it was because it was very close by. I had taken my Master Gardener training through Extension so I knew the people real well, I really ought to have my soil tested here, and it's something that I haven't done. I would like to call the Extension Service and have them to tell me what to do about the deer eating all of my plants.*

Plant societies. Plant societies played a big role in Claire's gardening world. They have been the main vehicle for opportunities to travel extensively and visit various gardens around the country and world. She explained her feelings about plant societies:

> *Well, I enjoy the plant societies. Daffodils are my prime interest and then Hostas, those are two plant societies that I'm on the national board for. But I take the Hemorecallis [daylily] Journal and the Iris Journal and things like that because I enjoy those plants.*

Claire gets involved with the plant societies she joins, she is not content with inactive memberships. As she mentioned, she is on the national board for the Daffodil and Hosta Societies but in addition to that, she judges their plant shows, teaches judging to new recruits, and writes for their journals. She shared what she enjoys about judging with the plant societies:

> *I judge for the Hostas and Daffodils Societies and I teach Daffodil Judges. I run all over the country doing that and I enjoy it. I taught in Clinton Mississippi, I usually teach one course a year, and I did Clinton Mississippi and I've done San Francisco, Maryland and a number of places around the country. But judging, what I like about it is that you see the new plants. You see you are exposed to new things and in the Hosta we're doing a new thing, we're judging the plants in the landscape which is where they really should be judged. A cut leaf on a show bench is not a very good milestone for the plant. You need to see how it performs in the garden, and this is a new plan that I think is really going to bring out wonderful plants. We're looking for the new things. We have a list of new introductions that we're supposed to look for.*

The depth of Claire's involvement in these societies as national board member, judge, judge instructor, speaker and writer is evidence of her interest and value of them to her gardening world.

The University of Tennessee Trial Gardens. A major gardening resource for Claire were the University Trial Gardens. She was first introduced to the Trial Gardens

by a gardening friend through a passing comment. Ever since her discovery of the Gardens she has been a regular visitor. Claire described her increased use of the Gardens:

> *And then she said [a friend], there's some stuff down there, and you know it was stuff she was interested in, and so I went on down and I guess I went back like three days later because I needed more time to really look at it and see what was going on, that was two years ago. And then last year I went quite a bit, and then this year I've been going oh at least monthly during the growing season. I feel so fortunate to have found that area over there.*

Claire had used the Gardens to learn many things to support her gardening interests. Her learning approach in the gardens was varied. Throughout her interview, Claire made reference to observing, visualizing, touching and feeling, comparing and drawing from experience. One of her primary interests in using the Gardens had been to learn what grows and thrives in the Southern climate, as opposed to the north where she had acquired her gardening experience. She shared her interest in the Gardens:

> *Well, it's one of those things, I don't purposely go, I'm not looking for a specific plant. As I say, I'm new to the area so I'm trying to find out what's really doing well here, what I can grow here.*

For Claire, the Gardens provided a resource for her to discover plants, as well as to learn what she would prefer to have in her garden:

> *So I'm learning there and there's a lot more room to learn, in the annuals, I've never grown annuals much. I've always been into perennials, so that's quite a learning experience for me and I'm not much of a fan of petunias. But there's some gorgeous petunias over there this year I'd love to have.*
>
> *The woody plants, those are the ones I'm really into. Magnolias because I think I can grow those fairly well here, I've been noticing what's there.*

She frequently made reference to visualizing plants she had discovered in the Trial

Gardens in her own gardens:

> *I kept thinking that would be pretty, so I'm going to move some things in my garden and make room for some of the things that I found over there.*

Claire made use of the Trial Garden literature by recording and indicating which plants she was interested in trying in her garden:

> *I'll have to get my little notes [Garden literature] and reflect on and let you know more about what I was really impressed cause I've got stars all over it and then I've got "Ughs" on some of them too.*

As she spoke about developing a cutflower garden in her landscape, I asked Claire if she had paid much attention to the cutflower portion of the Trial Garden and she responded:

> *Yes, yes, that really is something you know that's intriguing me. In Ohio we did not have enough space to do anything like that, but here I've got a lot more space that I can try some of the things so it's really giving me a good feel for what I can do.*

Herbs were a portion of the Trial Garden that Claire took an interest in. She enjoyed rubbing and touching them getting into their scents and fragrances:

> *The herbs, I thought that was very interesting down there. I have the scented geraniums, I thought they were beautiful in there. I grow a few herbs over here on the driveway in pots where I get a little more sun, so I thought that was a good experience to see what you all were growing. I found that I was stroking most of the plants and by the time I got through, I had all these scents on my hands that I had no idea what they were. A couple of them were not very nice but most of them were just absolutely yummy to enjoy.*

The Meaning of Gardening

For Claire, there is a powerful emotional connection to gardening. Working in her garden is a way of renewing her outlook on things and ridding herself of life's sadness and frustrations. It lifts her spirits and emotionally makes her feel renewed. She

spoke about how gardening helps her understand death and aids her in keeping life in perspective. Claire described her affective connection to gardening:

> *This is silly but we had this cat that died and it was in February, and Bill came home for lunch one day and I was really down and he says, "what's wrong, honey?" and I said, "Well I can't go to the garden." And he says, "What do you mean?" And I said, "Well, that's how I get rid of all of my frustrations and sorrows and things like that because it's really a revitalizing thing for me."*

The affective impact of gardening on Claire has been addictive. Gardening for her has been an obsession, one that has not gone unnoticed by her husband:

> *I just found I didn't work when my children were growing up, so it was a tremendous outlet for me, and to me there's nothing like gardening. I am just obsessed with it. Bill [husband] says that sometimes he thinks I love the garden more than I love him.*

Importance of Garden Aesthetics

Claire values the beauty she finds in gardens. She pays attention to the design and maintenance of gardens. She spoke about the beauty and aesthetics she appreciated in the Trial Gardens:

> *Well, I think it is so beautiful, really beautiful. It's pretty from the road too. I think it's very inviting - that you're going to get people that aren't so engrossed to come through.*
>
> *I do feel that you're growing things under the optimum conditions over there and I'm very impressed with it. I think I told you before with the weeding and it looked like things were taken care of and watered. The cultural practices are very good.*

Colleen Montgomery

Colleen is a 46 year old Certified Public Accountant who loves to garden. Her father is deceased and she has chosen to live with her mother in the family home. She

does the gardening and yard work around their home.

Colleen is a rather tall, slender woman with long, thin legs, arms, and fingers. She is a quiet, reserved individual and getting her to open up and converse during her interview was challenging. She has a zest and love for gardening which is evident by the large number of gardening organizations in which she is involved.

Herbs are Colleen's plant passion. She enjoys landscaping with herbs in her garden where they are not only available for their beauty but for cooking and crafts. In addition to gardening with herbs, she belongs to two herb societies and travels to visit different herb gardens.

Gardening Background

Colleen has enjoyed working outside since her teenage years when her father introduced her to vegetable gardening. However, working with vegetables was never her favorite type of gardening. Colleen explained:

> *We used to vegetable garden when I was a child, well I won't say a child, a teenager. And I didn't particularly enjoy that, because I like flowers rather than vegetables. I've always loved flowers. My father was a vegetable gardener and after he died I started digging up around the house and doing what I wanted to and so I would put in beds. And I've gradually expanded, every year a little more.*

In Colleen's present adult life, even more than flowers, herbs are her favorite garden plant. She explained her interest in them in the Trial Gardens:

> *Well, I think I visited sometime in June and it was about 6:00 or 6:30 at night and I had a lot of fun. Of course I'm real interested in herbs so I went along and I pinched the leaves of all the rose geraniums and I was trying to decide which ones smelled the best.*

Like Claire, she was drawn to their fragrance and enjoyed touching and determining

which had the best fragrance. To further support her herb interests, Colleen has belonged to two local herb societies, subscribed to an herb magazine and visited various herb gardens.

Connection To Others

Gardening for Colleen has been a good vehicle to meet people. Through her involvement in gardening societies and associations as well as her volunteer activities in the Trial Gardens, she feels she has met and has made connections with other gardeners. The relationships she has formed through her gardening activities have led her to gardening organizations she otherwise may not have known about:

> *I would never have known about Friends of the Gardens or met so many other gardeners if it weren't for my volunteer work.*

Networking with other gardeners through the gardening associations has strengthened her horticulture interests and education.

Colleen as Learner

Colleen is a self-taught, self-directed gardener. Her gardening education has been by her design and includes her personal experience and association with different gardening groups. The Master Gardener program is the most formal gardening education she has received. She has a desire to constantly be learning more about gardening. To satisfy this desire, Colleen uses a wide array of resources which include visiting gardens, volunteering, books and magazines, The Agriculture Extension Service, plant societies, and The University of Tennessee Trial Gardens.

Visiting gardens. Colleen enjoys visiting different gardens to get ideas on design and to discover plants which are new to her. Becoming aware of and learning plants she

does not know is very important to Colleen. Throughout her interview she mentioned several times how important learning plants are to her. Colleen travels to visit different gardens. She has traveled to regional gardens in Williamsburg, Asheville and Atlanta but would like to go a greater distance to visit other gardens in different areas of the country:

> *Of course there's a lot of places I'd like to go, but just haven't been yet. I'd like to go to Washington to the botanical gardens and see the National Herb Garden.*

Volunteering. One way Colleen continues her gardening education is by working as a volunteer at the University Trial Gardens. She has assisted with transplanting garden seedlings in the University greenhouses during the winter and then planting them in the Garden in the spring:

> *I learned a lot by volunteering in the Gardens. Just to work with you all and learn how you plant and break-up the roots was a real learning experience.*

Books and magazines. Colleen regularly reads magazines and books to support her gardening interests. She subscribes to an herb magazine, The Herbal Companion, which she feels has good information about growing and using herbs in the landscape. She browses regularly at book stores for gardening magazines. Colleen isn't one for purchasing a lot of gardening books and having her own library. Instead, she regularly uses the public library as her source for gardening books.

The Agriculture Extension Service. Colleen's major use of the Extension Service has been through her training and continued involvement with the Master Gardener Program, her only formal gardening education. She attends their monthly

meetings and assists them in various activities:

> *Well the Master Gardener Program was a tremendous help. They have activities every month and I go to as many of those as I can.*

Plant societies. Plant societies are a meaningful way for Colleen to support her gardening education. She is active in three local plant societies, two of which are herb societies:

> *I can't tell you how much I have learned about herbs by belonging to my two herb groups. With the workshops and educational meetings they have I have, learned a lot about growing and using herbs.*

Being on the board of The Friends of the Gardens has been a good way for Colleen to support and be involved with the University Trial Gardens. She acts as their treasurer and has assisted with many Trial Garden functions.

The University of Tennessee Trial Gardens. Colleen became aware of the Trial Gardens through the Master Gardener Program. Ever since her completion of the Master Gardener Program, she has been a regular visitor, using the Gardens for pleasure as well as for education. She deliberately has visited the Gardens once during each season to compare seasonal changes among the plants. However, during peak growing season, Colleen has visited numerous times to either learn plants, observe landscape features or just relax among the beauty and color. Colleen has gained many things from visiting the Gardens:

> *I've gained a tremendous amount of knowledge by visiting there [the Trial Gardens], I mean I've learned a lot of different plants. I've seen things that I've liked real well and I've also learned what I don't like as far as colors. I pay attention to the colors.*

She enjoys the Gardens for the variety of plants displayed. Since Colleen is

focused on learning plants, this was a very meaningful dimension of the Gardens. She described her feelings about the plants in the Gardens:

> *It's kind of amazing all the different species that you have, of say like geraniums and petunias and the different colors. I think a lot of people maybe think there's one type of something, maybe one kind of petunia, one kind of geranium or something. It opens you to that fact. And there are a lot of herbs that you see in the Trial Gardens that you don't see elsewhere.*

Colleen got excited when discussing newly identified plants from her visits to the Gardens. She became animated during this aspect of her interview as she expressed her enjoyment in learning plants. Effortlessly, she named the many plants she had learned in the Trial Gardens:

> *St. John's Wart you know, I wasn't familiar with that and I did get some of that and Spider Worts and I don't know how to pronounce it Lychnis, I got some of that. I love the white zinnia that looks like a little daisy, I went out and bought that the next year. Same with the peach verbena. And then I love that Early Coreopsis or Early Sunrise and Balloon Flower, and Astillbe, that's another thing.*

Color and fragrance usually attract Colleen to a particular plant. She pays attention to the flower color on plants:

> *The bloom color more than anything else and the fragrance, I'm interested in fragrance. And I guess, you talk about the texture and different colors of foliage and I guess I like the silver foliage and the blooms which are blue and the yellows and the purples and the peaches so those are the ones I like.*

The Trial Gardens enable Colleen to visualize what can be possible with plants. She described how she has learned from just observing plants in the Gardens:

> *Sometimes you read about things and you're not sure, if you don't see them, its hard sometimes to visualize them just from a picture in a book or a description. And you can kinda judge and learn how big they get and how they look in bloom when you see them in the Trial Gardens. I've*

seen quite a few things here that I liked that I just decided I needed to have in my landscape.

In addition to learning plants, Colleen has paid attention to the design and landscaped features of the Gardens. She has implemented ideas from observing these features of the Gardens:

I have landscaped under some of my trees like you have done in the Gardens. I've seen it here and then I've also seen it elsewhere, but probably here was the first time I've maybe really paid attention to it.

The Meaning of Gardening

Gardening has a spiritual meaning for Colleen. She frequently spoke about the beauty in gardening and what she enjoys about it. Feelings of success in growing plants has been a motivational force for Colleen to continue gardening. She explained her feelings:

I think it's fun to watch things grow and see what they do. And sometimes if a plant doesn't do for you, it's fun to find out why and maybe try a couple of more times and, I don't know, it's just fascinating and it's pleasurable.

Another connection to gardening for Colleen are the mental and physical benefits. She enjoys working in her garden for the positive mental and physical feelings she gains. In discussing this connection to gardening she described her feelings:

It's relaxing and I think it's a good. I know it's a good way for me to release tension too.

Colleen's visits to the Trial Gardens provide an array of positive feelings and emotions. She spoke about peaceful and calm feelings being invoked from the beauty and color she enjoys while strolling through the Gardens or while sitting on one of the benches throughout the Gardens. Colleen has also been energized by her visits, leaving

the Gardens very stimulated and motivated to work in her own garden.

Importance of Garden Aesthetics

Colleen pays attention to the aesthetics of gardens she visits. She mentioned the beauty of a butterfly garden she had visited as well as two native gardens. She particularly spoke about aspects of the Trial Gardens she had noticed and valued.

> *I like how the Gardens are always so neat and well kept. It's just always a pleasant place to visit. Everything is kept weeded and the flowers are kept clean.*

Jonathan Tucker

Jonathan, aged 69, is a retired school administrator who has gardened all of his life. However, just since his retirement he has really developed a keen interest in gardening and has deliberately set out to learn as much as he can about it. While in pursuit of his gardening education, Jonathan was able to obtain a part-time job with the city maintaining the grounds around an administrative building. Between this job and developing the gardens around his home, he spends the majority of his time gardening. As he states, "I spend a lot of time gardening and I work harder now than when I was getting paid before my retirement."

Gardening Background

Jonathan's mother introduced him to gardening at a young age. He has fond memories of helping her garden and could remember many of the plants they grew in their garden. Ever since these early years, Jonathan has continued to garden, as he states, "I've gardened every place we've ever lived and we have lived a lot of places, six

different places."

His primary gardening interest until retirement was greenhouse gardening. He constructed a greenhouse at each of the six homes he has lived. He has enjoyed growing orchids and propagating different foliage plants in his greenhouses.

At one point in Jonathan's gardening he was interested in growing roses. This interest was so strong that he had a test garden of new rose varieties for the largest rose producing company in the country. He enjoyed the excitement of growing new varieties as well as assisting with the company's research on plant performance:

> *I was a test gardener for the Bud & Bloom rose company. For several years back in Ohio I had the Tropicana rose, I had about a dozen of them as a trial test before they were on the market.*

Since retirement Jonathan has made a point to enhance his gardening education and as a result has become interested in annual, perennial and herb gardening. He began his education with the Master Gardener program with the Agriculture Extension Service. Through the Master Gardener program he became aware of the University Trial Gardens and began to volunteer with their maintenance. This volunteer experience got Jonathan excited about annual, perennial and herb gardening and inspired him to start growing these type plants. Education from his volunteer efforts in the Gardens inspired Jonathan to develop additional beds around his home for this type of gardening. He explained his gardening evolution:

> *The Trial Gardens have made me more involved in flowers. I've been sort of routine in what I've done. You know there are certain flowers that have worked for me and I've stuck with them over the years, like the petunias and the marigolds, this type of thing. But the Gardens have just exposed me to so many other plants I never even heard of or seen and I've had fun getting into growing these new things.*

Jonathan's gardening interest enhances his part-time work with the city. He has added several new annual, perennial and herb plantings around the city grounds. He explained:

> *I'm starting a perennial garden down at the city building. I've got a plan of the plants I want to put in there and we're going to start it probably next week.*

In addition to growing new and different types of plants, Jonathan has learned how to cook with his garden herbs. Cooking is something Jonathan enjoys but he had never attempted to use herbs with his cooking. This new use of herbs in his cooking has been enhanced by talking to others who grow and cook with herbs:

> *And I'm learning how to cook with different things, things I've never done before. Using the herbs is a new thing and it's very interesting. I keep hunting for recipes, listening to what people say and how they have used different herbs.*

Selling flowers cut from his garden is also a new experience for Jonathan, since expanding his garden repertoire. He is planning on selling his flowers which are not sold in most markets and florists. This activity can also earn Jonathan some money.

Connection to Others

Jonathan connects with others by sharing the Trial Gardens with people he meets. He is not involved in garden clubs or plant associations where it is easy to form relationships with other gardeners. Instead, he relies on the Trial Gardens for a sense of connectedness. The Gardens have been so meaningful in Jonathan's gardening education that he wants to share them with everyone. He is a wonderful ambassador for the Gardens through this enthusiasm. Perhaps it is Jonathan's background as an educator, that gives him the desire to educate as many others as he can about the

Gardens.

> *It's an amazing experience being around plants over at the City Building. I've had more opportunities to tell people about the Gardens and how wonderful they are. And many of them have promised to go there, especially those that said they didn't even know that the Gardens were there.*

The Trial Gardens have been a source of connection for Jonathan to his neighbors as well. He has enjoyed sharing bits and pieces of his education from the Gardens with his neighbors and in turn has influenced their gardening practices:

> *One of the things that I got that you use in the Gardens is one of those watering wands. It's amazing. I spray everything with that and it's amazing how easy it is on plants and my neighbor took care of my garden while we were away on vacation and he got a wand and the neighbor across the street got one. So there is four of them right around our house now.*

Jonathan As Learner

Since his retirement, expanding his gardening knowledge has been a goal of Jonathan's. In an independent and self-directed manner, Jonathan has chosen several different means to learn more about gardening. The learning resources he has used include visiting gardens, volunteering, books and magazines, The Agriculture Extension Service, plant societies, and The University of Tennessee Trial Gardens.

Visiting gardens. Jonathan and his wife travel quite a bit since his retirement. Wherever they go they seek out gardens and garden centers. He enjoys observing and learning about plants and how they are used in a garden. He spoke about one of his most recent trips where he visited a Japanese garden and a garden center:

> *We went to this garden near Bar Harbor, Maine, that is a Japanese type garden and I was able to tell this friend what some bushes were; so luckily they were things I knew. The garden was beautifully designed and you got*

ideas on how things can be done. And we went to a garden center and I have their catalog somewhere. They had on every plant that they sell, - they have the full name, the latin name and the common name and whether it's a perennial or annual just on the little tag. And they had an amazing number of plants there.

Jonathan has made use of various garden centers around his community. He enjoys visiting them to study their display gardens and to see what plants are available. One garden center in particular has proven to be a good source for perennial plant information. He regularly visits the gardens at this garden center and consults with their staff:

It's been good that I've been able to work with ABC Garden Center. They've got an excellent garden there and a good selection of plants and one of your graduates is the fellow that I've been working with. They have really helped me with perennials in establishing my garden around the city building.

Books and magazines. Jonathan reads gardening books and magazines to enhance his horticulture education. He doesn't subscribe to any gardening magazines but enjoys regularly reading what is available in the library. Jonathan also doesn't purchase or own many gardening books but uses the library regularly for such resources. However, he has reported that he is in search of a particular type of book which would help him with his gardening. Throughout his interview he expressed several times how he has not been able to find the right books to help with his gardening needs. He is disillusioned with his search, as he states, "the books don't really help, course I haven't been able to find the right books yet either."

Jonathan recently joined a garden book club which he hopes will be a good source of gardening books and will enable him to build-up his personal library. So far he has

not been impressed with their monthly selections. Of the three books through the club he has bought, he was only pleased with one:

> *I joined this garden book club and so far I've picked one that I like, I picked two others and neither one of them was anywhere near what I wanted.*

The Agriculture Extension Service. Jonathan's first step in expanding his gardening education since retirement was attending the Master Gardener program through the Agriculture Extension Service. He became aware of the program through a newspaper advertisement. Jonathan felt he learned a tremendous amount about gardening through the program and enjoyed the course information from university faculty and staff. In addition to learning more about gardening, the Master Gardener program made Jonathan aware of the Trial Gardens and the volunteer program they offer for interested persons:

> *I got interested in it [the Master Gardener program] because I like gardening and I saw this ad in the paper. And among other things I couldn't believe the price. I think it was $10.00, something like that. The Master Gardener program in itself was tremendous. I learned so much new information and then at the end or near the end they told us that we had to put in 30 some hours of community service either at the Extension office or out in the field helping people or we could work in the Trial Gardens. And my hand went up and I was the first one I think to sign up.*

Beyond his involvement with the Master Gardener Program, Jonathan uses the Agriculture Extension Service for information to aid him with his grounds maintenance job. The county extension office is close to the grounds he maintains, so anytime he needs information it is convenient for him to go and seek assistance:

> *If I have any problem down at the city building grounds, I just go up to the 5th floor and talk to the agent and you know he'll tell me what it is.*

Volunteering. Volunteering in the Trial Gardens has been an effective way for Jonathan to broaden his gardening education. Jonathan's volunteer efforts involved most Garden activities from transplanting seedlings to maintenance. Through hands on experiences and working closely with the Trial Garden administration, Jonathan was able to, "reinforce what I was taught in the Master Gardener program."

Through his volunteer work, Jonathan studied gardening techniques in the Trial Gardens and improved his knowledge of gardening:

> *I was always jealous of you people [the Trial Gardens] because your plants grew better than mine and then I finally figured out that first of all you had much better soil than the red clay I have.*

Jonathan has paid close attention to how the Gardens are planted and maintained. He was enthusiastic as he explained learning new ideas and wanting to share this knowledge:

> *Well the first thing I learned in the Gardens when we were transplanting plants was the fact the you break open the root base and I saw people just tossing the plants down to be planted and I was thinking, "oh my god, these things will never live." You know. And they do much better when the root has been separated, and they seem to survive being flipped down onto the ground. That has stuck in my mind more than anything else that I've learned. I've told everyone everyplace that I go, I tell people this is what they must do. And I've seen what happens when you don't break it up at the end in that the plant many times will die and you pull it up and there's that little ball of roots.*

Jonathan's volunteer work has exposed him to new and different plants, creating an interest in growing many new plant varieties. He was most excited about the herbs, a previously unknown part of his gardening:

> *I have really got turned onto herbs since working with them in the Trial Gardens. I now have them planted in and around all of my gardens at home.*

The University of Tennessee of Trial Gardens. The Trial Gardens have been a valuable learning resource in Jonathan's gardening education. As previously mentioned, he learned a great deal through his volunteer activities in the Gardens. In addition to his volunteer activities, Jonathan has visited the Trial Gardens about a dozen times a year to make use of and observe what is happening in the Gardens. Sometimes he has visited with friends and family just to take in the beauty, while other times it is for learning and broadening his gardening knowledge.

One of Jonathan's self-directed learning tasks has been in the Gardens. He occasionally has visited the Gardens to identify plants in his garden unknown to him:

> *Several times I've had plants that I have growing in my yard that I didn't know what they were and I brought them down here and I've been able to identify them. This has been very helpful to me. I don't have books that list every plant so it's been very helpful. I'd say at least a half a dozen times that I've done this.*

Jonathan has used the Gardens to learn different plants as well as their performance in the South. He has studied plant combinations and has implemented some of what he has observed. He explained:

> *One of my first real good experiences in the Gardens was seeing the new, it was new then, the Salvia 'Rhea', the blue perennial. And since that time I've been growing it in my own yard; so I have some positive results from being down there. But the Gardens themselves are so impressive, so many different things, so many different things of one kind of plant. You get ideas too on how to use different plants together.*

Through his involvement with the Trial Gardens, Jonathan developed a passion for herbs. After learning the many different types of herbs and how they can be integrated with other plants in the landscape, Jonathan has planted them both in his garden at home and in the one he maintains for the city. He explained:

I have really got turned on to herbs through the Trial Gardens. I love their fragrance and just how beautiful they can be. I have planted basil all throughout my garden at home as well at the city's [gardens].

Jonathan has made use of the Trial Garden personnel in his gardening education. He frequently will call or stop by the Gardens to get answers to gardening questions:

I really rely on you people [Trial Garden personnel] for information as well. Like today, bringing in this Verbena that I didn't know what it was.

The Meaning Of Gardening

Jonathan has an emotional connection to gardening. It continually builds his self-esteem and pride. The greatest reward for Jonathan is when he is complimented on his garden:

I've got people who drive by and tell me that I have a beautiful garden. That's always nice. It's a thing of pride I guess to have a pretty looking place.

The emotional connection Jonathan has with the Gardens gives him the desire to educate others about them. Jonathan's community has been a good outlet for him to share his gardening passion. He has made a point to educate the children in his neighborhood. Jonathan spoke about an incident where neighborhood children ruined his flower garden. Rather than get angry and scold the children, Jonathan invited them to visit his greenhouse where he showed them the plants he had growing. He gave each of the children a plant and told them how to care for it. He invited them to come back in the spring where he would give them another plant to grow outside. Jonathan was successful in deterring the children from destroying anymore of his gardens as well as getting them interested in gardening:

I showed the children my greenhouse and we talked about it for awhile.

They all came back in the spring and I gave them some plants. They took them home and they kept coming back to tell me how their plants were doing.

Importance of Garden Aesthetics

The neatness and cleanliness of a garden are important to Jonathan. Aesthetics are something he pays attention to in any garden he visits. Jonathan takes particular pride in the appearance and aesthetics of the Trial Gardens. His volunteer efforts with their maintenance makes him proud of how they look. He is very attuned to how the Gardens look and wants to share their beauty with others:

And people are always impressed at the amount of work that has gone into them and also at the beauty of the flowers and the variety of the flowers. Just, I've never felt bad about telling someone or inviting someone to come over with me to see the Gardens. They've always looked good.

Maddie Cooper

Maddie, aged 46, grew up in a family that loved gardening. Many of the plants she now grows in her adult life have been pleasant reminders of her childhood gardening experiences. From her early twenties to early forties, Maddie devoted her time to work and raising her five children; she didn't have time for gardening. Since gardening had been pleasurable for Maddie, she was anxious to get back to it. In the past few years with her children mostly grown, she was able to garden again and found it was something she still enjoys. This pleasure was so strong that Maddie pursued formal education to support her gardening interests. She has since received undergraduate and graduate degrees in horticulture and is presently a full-time graduate student working on a doctorate degree in botany.

Gardening Background

Maddie was raised on the West Coast which is often referred to by most gardeners as a horticultural paradise. With the temperate climate and abundant rainfall, most plants flourish beyond expectations making gardening a rewarding and popular activity. Maddie's parents found this to be true with their garden. Maddie loved the garden her parents created around their home in Seattle, Washington and could vividly remember it:

> *We grew up where everybody seemed to come out of the cradle knowing how to throw together these magnificent gardens. So I've always had a garden for as long as I was aware what a Snapdragon was. My mother and my father both loved all aspects of garden design so she started gardening. And she cut this beautiful lot into two places, the upper lawn and the lower lawn. And she put in a rock garden and paths and stuff. What they did was we used to go and cut big trees, cut them into drifts and treat them and stick them in the ground and put gravel around them. Cause you got so much rain you had to have something that would drain quickly. So I can remember those big pieces of wood as stepping stones in our garden. I can still see that garden, I can see it as clear as can be. The design elements were incredible.*

Maddie remembers in particular gardening with her mother. She deliberately grows certain plants to remind her of her mother and the garden of her childhood:

> *And there were many, many years I didn't have time to garden, raising kids and working and so-forth, and I never hardly ever grew anything. But as soon as I got time to go back to the garden, those were the first three plants [pansies, snapdragons, and dahlias] that I wanted in my garden. They remind me of my mother and her beautiful garden.*

Since Maddie's youngest children are now teenagers, she has more time for her interests and has returned to gardening. She is trying to recreate the beauty she remembers in her parents garden. She has been gardening intensely for the past 6 years. Gardening in the South has been challenging compared to what Maddie remembers about

the Pacific Northwest. She feels she wasn't successful at gardening until she pursued formal gardening education at the local university:

> *Now I know it takes a tremendous amount of skill and knowledge to have a beautiful landscape. I wanted to garden but wasn't successful, and this was after I was living in the South. I never liked anything I did until I started taking classes in horticulture at the university.*

Pursuing higher education has been important to Maddie and was something she never thought she would do. Being successful with gardening and completing two college degrees gives her a sense of accomplishment. As Maddie has pursued gardening education, her success and enthusiasm has increased. Beyond her sense of accomplishments, she now believes she has the ability to share her knowledge through garden lectures and tours.

Connection To Others

Between family and work as a graduate student, Maddie has had little time to connect with other gardeners through garden clubs or societies. However, she has used the Trial Gardens to strengthen relationships and share the educational experiences in gardening. As an example, Maddie has taken out-of-town family to the Gardens to share the beauty, to provide the educational opportunities, and to bring them together as a family. For example, she shared this belief in relation to a visit from her father-in-law:

> *I figured since we are both into plants, we would enjoy the Gardens together. And I could show him how to get there, so that he could get there on his own later if he wanted to. Like me, he likes to find the names of new things and then he'll go and order them and put them in his landscape.*

Another way of connecting with others was through an educational tour Maddie gave of the Gardens to battered and abused children in a rehabilitation program at a local

mental health institution. Maddie was excited as she described how she taught the children about plants, their growth and use. A few weeks before the tour, she had given the children left-over flowers from the planting of the Trial Gardens so they could make their own garden at the mental health institute. When she gave them a tour of the Gardens, she used live plant specimens and dissecting scopes to make their education more tangible and allow them hands-on experiences. She was even more enthusiastic describing the children's enjoyment of the Garden beauty. The education and exposure she gave these children to gardening was rewarding for Maddie. She explained:

> *I took a tour, took a group of kids from the Wellness Institute through there and I can't tell you how delighted they were, absolutely delighted. I volunteered to do that, they brought about I guess about 30-45 battered and abused children to the university and they came into the classroom and I explained to them a little bit about plants, not overload, but like the difference between a wilted plant and a plant that isn't wilted. I was trying to get them to understand plants don't have bones, they have water and they have pumping mechanisms where they can pump themselves up and stand up straight, and get to the sun. And when they don't have that water, then they wilt and they fall down. And they loved it. It made an impact because they understood what I was talking about. And I had a little dissecting scope for them to look at the roots, because children love microscopes. I mean I think that's why it appealed so much to me because I never grew up. But then they took them to the Trial Gardens and I gave them a tour. They absolutely loved the beauty of it, because with the left-over plants I gave them from the Trial Gardens, they created their own garden. So the left over plants went to a garden that they created, and they had no idea how beautiful a garden could be. They were all absolutely amazed at how beautiful they were. They were so excited and because each one of them circled their favorite plant in the Garden brochure. I mean this was a real thing for them. They wanted to come and show me what their favorite plant was. The kids were excited, they loved the wide-open space and the beauty of it all.*

Maddie is enthusiastic about the educational opportunities the Gardens provide and the link it provides between the university and the surrounding community:

> *I think that it is a connection to the community and I think it's a marvelous resource for gardeners in town. There is the opportunity that maybe somebody will look at that Garden and think how wonderful a botanical garden would be. I see that as the first step to getting people excited about a botanical garden, which I think would be close to dying and going to heaven to have one here. So, I think it's a very persuasive tool when it comes to that topic. The biggest thing to me is it's the future, it's a hope for the future of things to come. It's a move in the right direction, the Trial Gardens. If people will just take advantage of that. That's probably the biggest thing that I wanted to say about the Trial Gardens.*

Through her work at the university and learning experiences in the Gardens, Maddie has developed a sense of ownership towards the Gardens and feels it is a place where she can take others to promote gardening as well as the university. The Gardens are a place where she can connect with other gardeners and they can connect with the university:

> *Over and over and over again we hear we live in the ivory tower, we don't have a connection to the community. Well I think that Garden is a connection to the community and I think it's a marvelous teaching resource.*

Maddie As Learner

Education and learning have played an important role in Maddie's life. She has chosen on her own the different learning strategies and resources to enhance her gardening knowledge. The resources she has made use of include: visiting gardens, volunteering, books and magazines, The Agriculture Extension Service, plant societies, and The University of Tennessee Trial Gardens.

Visiting gardens. Maddie enjoys traveling and visiting gardens and garden centers in different regions of the country. Because she has children at home, she has fewer opportunities to visit gardens. Of those she has visited, she particularly values their educational merit for garden design ideas.

I think traveling and visiting different gardens is beneficial to see how others use plants. I would love to travel to other gardens more, but kids and a husband complicate the situation.

Books and magazines. Reading books and magazines is a regular learning activity for Maddie. She has built up an extensive gardening library, owning about 100 books. Because she so enjoys gardening books, her family knows that gardening books are a popular gift. She doesn't use the library for her gardening interest; but would rather purchase books and have them available at her convenience:

All of my relatives know I'm a book person, so they buy me either a wildplant or wildflower book, gardening book or plant book. I bet I have around 100 books in my library. I like to buy books.

Maddie subscribes to several different gardening magazines. She feels the magazines keep her informed of the latest trends and technology. With anticipation she looks forward to reading each new issue:

I subscribe to Greenhouse Technology and Plant Grower and every time they come I want to put everything else down and look at those.

The Agriculture Extension Service. Maddie has used her county extension agent in the past for help with her gardening but finds them to be inconvenient due to her current home location. She was able to recall her county agent's name but hasn't utilized him in a while:

I'd love to utilize them a whole lot more but it's so inconvenient to where we are now. In the past I have had Joe [county agent] help me with all types of gardening questions.

The University of Tennessee Trial Gardens. Maddie has visited the university Trial Gardens regularly throughout the growing season to study and observe the different dimensions of the Gardens. She emphasized the important educational role of the

Gardens:

> *The importance of that Trial Garden is almost unbelievable for me. In other words, it's a lot more important to me than what this interview has brought out. It's important to me because it is visually appealing. It's a wonderful place to be. So when you try to escape and go out there, the feeling that you get when you're in the Trial Gardens, I can't find the words to express how I feel. The second way it is so important to me is as a learning tool or teaching tool. I have used the Gardens to learn so much and to teach others.*

Maddie spoke about the Trial Gardens with great passion. She expressed her overall learning experience:

> *I don't know how I would have managed as a gardener without the Gardens, I would not be on the level that I'm on now as a homeowner without it.*

Maddie has used the Gardens for different types of gardening information. She has used it as a source of garden design ideas, and how different types of plant materials can be integrated and used together. The Gardens have also served as a good resource for learning plants which are new and different to Maddie. Each time she visited the Gardens she paid close attention to learning plants:

> *When I visit the Gardens, I want to see what you that is new to me. I'm always interested in learning new plants.*

Maddie has used the Gardens to educating herself about the different types of plant materials. The labeling system and variety of plant material in the Gardens have been valuable to her learning. Being attracted to woody blooming plants, she has been especially interested in learning plants with outstanding flower color. Whenever she visits the Gardens, she pays particular attention to the trees and shrubs in bloom and records the plants she finds outstanding. Perennial flowers and herbs are plants she has

been interested in as well. She had been able to build her knowledge of these plants, their use, and characteristics through the Trial Gardens:

> *I'm still learning herbs too. So from an educational standpoint, the herb garden has been marvelous. When you get to the herbs it's both the identity of the plant material and the design of the plant material that give you a lot of ideas, gives me a lot of ideas.*

Maddie has used the Gardens to identify plants. For example, she many times has grown plants of personal interest of unknown origins. Learning the identity of these plants has helped Maddie broaden her plant knowledge. She also has been able to identify her plant preferences, often recording identified plants for future garden planting. Again, the labeling and garden literature have been useful to Maddie in learning this information. Maddie has identified the latin name and source of a plant from the Gardens. She has felt such information, often in the Garden literature will help her in finding plants she prefers for her garden:

> *The botanical names are important, not just seeing them [plants] and saying oh like that and never having a possibility of ever buying it because you don't know what it is. But instead I like that you have that in the literature in the Gardens and I know its name and I even know the seed company that donated the seed so there that's three bits of information that are vital to me.*

Maddie has valued the maintenance of the Gardens studying techniques used throughout the different seasons. She has observed fumigation of the Garden's soil, tilling, application of mulch, the irrigation system, and the installation of berms [raised beds]. Observing such information has reinforced Maddie's knowledge of garden maintenance and reminds her of different techniques used:

> *I get to see the maintenance of the garden. I get to see you fumigate the beds and till the beds and see most homeowners wouldn't think of doing*

that. I did take a class where they taught us how to do strawberry field preparation. That was the first time I was introduced to fumigation. But other people would not ever think, a gardener would not think of fumigating those beds.

The Meaning of Gardening

Gardening is interwoven throughout Maddie's life and has helped shape her adult journey. As she explains, "It's hard for me to separate [being] a gardener from everything else I am, it's all integrated." It provides a link to her past, is a form of artistic expression, and has built her confidence and self-esteem.

Maddie's early gardening experiences with her mother are meaningful to her. She has enjoyed a close relationship with her mother and an interest in gardening is something they still share. Gardening and plants are symbolic of the good things in Maddie's life. Maddie described the impact her mother has played in her gardening:

I don't think that I would have ever chosen horticulture or been interested in anything except artificial flowers if my mother had not been my favorite person in my world and plants had not been what she did well. In other words, the two things together. If it weren't for my birthplace, my mom, and her enjoyment of plants and her ability to do it well, I probably would not be in horticulture today.

Gardening holds meaning for Maddie as a form of artistic expression. She would have liked to have been an artist but raising her family took priority. Maddie was surprised to discover she could artistically express herself through the use of foliage textures and flower colors in her garden. She especially liked the dynamic nature of gardening. She described the appeal of gardening as an art form:

There is a very artistic side to us and there's a real need for beauty in our lives. And the landscape plant materials not only fulfill that need but they go to a higher level in that it's living and it's changing and it's never static. You go out and you buy a masterpiece and you hang it on your

wall, it's never going to change. It's going to look like that every day when you get up and it's going to look like that when you go to bed. But look at your landscape, it is endlessly changing. There is no way you can fix it in time other than to take a photograph. No other way.

Maddie's self-esteem and confidence has been strengthened through her gardening. She grew up in a male-dominated family and was led to believe she had no other role or purpose in life than to be a wife and mother. Gardening opened Maddie's life to a dimension she did not expect and led her to take a class at the local university. There, for the first time she got excited about what she was doing:

When I took my first horticulture class I couldn't sleep at night I was so excited. I thought this is what they're talking about, to find something you love because until that time I'd made a living and I'd worked, but I had never gotten up in the morning all excited about doing something. And boy did I ever get all excited about doing something and that was horticulture.

As a consequence of her formal horticulture education, Maddie now feels confident about making decisions and solving problems on her own. This new confidence gives her a sense of freedom and affects other areas of her life:

But I do know that I feel confident about going home and spending $3,000 to dig a hole and not worrying about not having everything else planned. You see what I mean is there's a freedom when you become confident about your own abilities, just doing it your own way instead of just repeating somebody else's solution to a problem. That's the exciting thing about where I am in life right now. So, I really feel like I'm beginning to pull back the curtains and think on my own about everything.

Maddie is aware of the shortcomings in her education from the university, both from her undergraduate and graduate degrees. She is now directing her learning to fill in the gaps. Traveling and visiting with other gardeners is something she wishes to do to broaden her education. She explained her methods to supplement her education:

I am definitely more educated then I was at the end of my undergraduate degree and that doesn't have anything to do with my masters degree; because the masters degree gave me confidence but didn't give me one skill as a homeowner or grower or a commercial person or a perennial plant person. The university gave me all it had in the undergraduate program and it wasn't enough for what I wanted to do. It wasn't cohesive, it didn't include perennials, didn't include annuals, it was too broken up and disconnected. But now I've learned that the next piece of the puzzle is to travel and to experience different places. You have to leave [the state] or you have to leave and look in search of ideas and you have to listen to other people and how they solve a problem.

The beauty of a garden gives Maddie a sense of escape from reality where she can lose herself among the different flower colors and plant textures. Many times Maddie will visit the Trial Gardens to escape the windowless lab where she works to take in its beauty and peacefulness.

The reason I want to go there [Trial Gardens] is because it's beautiful, it's quiet, and it's breezy. So I do it because I'm locked in that lab, no windows, and the prettiest spot on campus is in that Trial Garden. I mean, to me, if you want beauty you've got to hike over there and see the Trial Gardens. We've got pockets all over campus but nothing as spectacular as that area in the Trial Gardens.

Steven Taylor

Steven, aged 34, is an accountant turned professional horticulturist. Disillusioned working with numbers and tired of an inside desk job, he decided to pursue a career in his hobby of gardening. He enjoys being outside and working with nature. Steven has dark short hair and is of medium build and is an extremely focused and serious-minded horticulturist. He holds strong views of gardening and had one of the lengthiest interviews of all participants. Steven could elaborate in great length about most topics discussed during his interview.

Gardening Background

Steven grew up in a family that loved to garden. Both parents were involved in gardening and so working in the yard became a regular family activity. Steven always enjoyed gardening while growing up and even did weekend gardening jobs for money. But he never seriously considered gardening as a profession. After graduating from college with degrees in finance and accounting, he decided he would be happier working outdoors than with a career in accounting where he would have to work "inside". Already having an interest in plants, horticulture seemed like the perfect profession. It would combine his love of the outdoors with his enjoyment of plants. Steven valued the casual lifestyle that accompanies gardening. Being able to work outside and having limited exposure to people really appealed to him. Steven investigated building greenhouses and purchasing plants but decided he lacked the education and experience to warrant the monetary investments required. He decided that work experience before owning his own business would be the key to his success. He devised a personal learning plan where he would try to work at different types of horticultural businesses to round out his education. He has been very deliberate and methodical in his education and work experience pursuit. In a five year period he has gained experience from three very diverse horticultural businesses.

Steven is currently employed where he feels it will be his last and final place of employment before he goes into full-time business for himself. While working towards his career and educational goals, Steven has started his own business on a small scale, part-time basis at his home of twenty acres. Like his education and work experience

pursuit, he has been careful in planning the type of business he would like to operate. He has deliberately chosen a different business than those commonly found in the horticulture market. He will be producing new and unusual plants which generate higher revenues than plants commonly found in the market. Once he is ready to do his business full time, he will expand what he has started. He shared these ideas and plans:

> *I decided I wanted to work outdoors and was interested in plants. It's a big change. What I did is I decided I'll just start a nursery and you know I felt like I knew enough to do that. And I went out and I started shopping for greenhouses and talking to people about plants and buying plants and supplies and I realized that I really didn't know enough to invest that kind of money. I felt like I needed to get experience, so I just decided to go to work for a nursery and I went to work. I went and got a job at a wholesale nursery, Greenthumbs, and worked there for a couple of years and learned that end of it, you know of large scale I guess really a medium-sized wholesale nursery and then went to work for a smaller mail order nursery for Sungrown Gardens doing production in wholesale sales and retail sales some and stayed there for a couple of years. And then now I've gone to the Grower's Market doing retail sales and landscape designs trying to get the overall picture of everything, you know, the whole spectrum as much as possible. At the same time that I started working for Greenthumbs initially then I did start a nursery of my own but just on a very small weekend scale of two greenhouses. I was producing a variety of things and concentrating on things that were new or unique or that because of my rural location and the fact that I can't afford manpower right now having the things that are unique can have a higher price tag and profit market.*

As a professional, Steven considers himself a gardener and a horticulturist. He has formed distinct opinions about the role of each in the gardening industry. He believes that a horticulturist should have knowledge about the scientific, artistic and cultural aspects of gardening; he has deliberately tried to achieve this integrated knowledge through his work experience. On the other hand, a gardener is someone who has an on-going relationship with their clients. He explains:

In a narrow range I consider myself a gardener because I do things more intensely, I try to make my relationship, professionally speaking, I try to make my relationship not a one time thing. I try not to just do an installation of a landscape or make a sale of a plant and then that be my only contact with the person. I try to make an on-going, long-term relationship because a landscape or a garden is an on-going, long-term relationship with its owner, and that's what a gardener does.

Steven has adamant feelings about horticulturists versus what he calls landscapers:

We joke at work about what we consider ourselves cause we really get upset when somebody refers to us as landscapers, because we feel that landscaping has a negative connotation. A landscaper, like a carpenter that builds the house, is there for a short period of time, gets the job done and they may never see that person ever again. From a broad spectrum, from a broader spectrum, I consider myself a horticulturist because I try not to just know about one segment of the whole picture. You know, I try not to just know about landscaping with trees or growing container perennials. I try to know about landscaping with everything and maintaining it and not only doing trees and shrubs but knowing about perennnials and knowing about herbs. I'm getting ready to start a job where I'm going to create an arbor of pleached apple trees, and you know that's something outside of the main stream of typical landscaping. I try to know about composting, I try to know about organic alternatives, to know about propagating plants, and growing plants, and not only the scientific aspects of horticulture, but the artistic aspects and the cultural aspects and how they fit in with people's lives, not just looking at it as a separate segment.

Steven's informal, self-directed learning has made him a successful and well respected horticulturist. In five short years he has formed impressive ideals which, when combined with his business education, should make him successful with his own business.

Steven has distinct interests in gardening, most of which revolve around preserving plant and animal antiquities. He shares these gardening passions and values from this perspective:

I'm concerned with native plants. I'm concerned with things that are disappearing. I'm concerned with conserving old plants, and I'm also concerned with preserving all the animals, all the breeds of agricultural

animals. I'm concerned with old breeds of old cultivars of agricultural plants, old fruit trees. I maintain a big orchard with lots of antique apples trees and things. So you know the list just goes on and on; I just really like the lifestyle.

Steven As Learner

Steven is a focused, deliberate self-directed learner. He has set clear learning goals as a horticulturist and to achieve them has used a variety of resources. Steven carefully chooses the resources he uses in his learning. He evaluates and compares what he learns from experience to the learning sources he uses to supplement his education. The resources he has used to extend his gardening knowledge include: visiting gardens, veteran gardeners, books and magazines, The Agriculture Extension Service, plant societies, and The University of Tennessee Trial Gardens.

Visiting gardens. Visiting gardens is one of the ways Steven learns about gardening. Whether they are formal botanic gardens, private residential gardens or gardens at nurseries and garden centers, Steven finds them to be valuable resources. He claims that by visiting and observing different gardens, you can "learn from other gardener's mistakes." In particular, he goes out of his way to notice and observe private gardens and landscapes over a period of time, many years in some cases, to determine what errors were made. He feels he learns a great deal this way. He explained:

I like to get out and see the things that are done wrong. You know getting out and seeing landscape installations and particularly seeing them at aged intervals, 5 or 10 years down the road, and seeing how they were not done well, the future was not taken into consideration.

In addition to paying attention to gardens and landscapes he visits, Steven takes advantage of mother nature as a learning resource. He enjoys hiking and has found this

activity exposes him to plants in their natural setting where one can learn much about their native performance. Since he is concerned about regional influence upon plant performance, Steven uses hiking to support his learning of such information.

Veteran gardeners. Talking with veteran gardeners has been a good learning resource for Steven. He believes older, experienced gardeners possess a wealth of gardening knowledge and are a good source of information. He deliberately goes out of his way to become acquainted with such gardeners for use as a gardening resource:

> *I try to find older gardeners and the Grower's Market has been a good menu for this. A lot of valuable, tried and true information can be learned from them.*

The University of Tennessee Trial Gardens. Steven visits the Trial Gardens about six times a year for his own personal education. He is interested in learning what is new and different in the way of plants and determining what plants, if any, are intriguing to him. He also visits to stay abreast of new plantings and dimensions in the Gardens to enhance his professional work. One way Steven uses the Gardens is for learning and discovering plants:

> *My main focus in visiting the Gardens is to continually be finding some new plants to use. I want to stay up on new introductions and things I have read about in books and catalogs.*

Plant performance over time is an important issue for Steven and something he tries to observe in every garden he visits. He explains this interest, by suggesting:

> *You know learning how things perform and what things really look good over time. I guess my emphasis is seeing the things that consistently throughout the season look nice and clean and crisp and healthy and attractive, you know from a professional standpoint, looking at them over time not just which one has a pretty bloom at a point in time.*

Steven uses the Trial Gardens to facilitate his work with his clients. He finds it a great learning resource to refer his customers. When he has clients who have no idea which plants they would prefer to have in their landscape he recommends they visit the Gardens and study such information to determine their preferences. Steven does not have adequate display gardens at his business to demonstrate the plant performance for his clients. He has found the Trial Gardens provide a good teaching tool for his clients to visualize the plant and to determine their landscape preference:

> *I think one way that it is valuable to me is seeing things myself. But another way, probably even a little bit more valuable, is I've got a limited space to have plants to show people when I'm trying to sell a landscape job or even when I'm trying to sell a one gallon plant. [It's hard] to try to get across to them to help them conceive what that one gallon plant is going to look like in 10 years. And it's useful to me to have a place close by, that's relatively all encompassing where I can say go there, go look at it, where you can get an idea and you can pick out some things. Or if I'm designing a landscape job I can say go down there and see what strikes you, write down the names or the numbers, come back and bring that to me and then let me incorporate that into something that will go, that will suit your needs.*

Books and magazines. Books and magazines provide a supplement to Steven's gardening education. He loves to read and spends $500 to $750 a year to update and expand his gardening library.

Steven is well read and gave the impression that a great deal of his horticulture expertise has come from reading. He is knowledgeable about a wide array of gardening authors, elaborating easily on their work. Steven uses books for many of his garden designs:

> *I probably don't have that many original ideas. I mean I'm like everybody. I rob a lot of things from pictures and from history in books.*

His reading of books has become a standard by which Steven is able to judge information from other sources. For example, visiting gardens and talking with other gardeners are many times secondary sources of information which provide a medium to verify and validate information he first learned from reading. Sometimes, Steven finds conflicting information in books from what he has experienced or observed in his own gardening. He has become skeptical of all that he reads. He explains:

> *Visiting a lot of Southern gardens has influenced me a great deal because the literature in books and magazines and anything that you find in brochures is geared towards the northeast. Because that's the section of the country that's been gardening longer than any other, because you know that's where the publishing companies are and everything and frequently is not pertinent to the Southeast. And a lot of it is on English gardening and there's a tremendous emphasis now on, you know, English gardens and everything. While there's a lot of information there, nobody really segments that information and says, "well this really doesn't apply to the Southeast." You know very frequently in a book, it will say zone 4 through zone 8, but that's not much information. They don't tell you that it's going to behave very differently in Zone 4 than it's going to behave in Zone 8, and it needs to be treated in a different way. Delphiniums are a perfect example. They behave very differently in Connecticut than they are going to behave in Knoxville than they're going to behave in Atlanta, and you have to take that into account. The books don't typically give you that information. And I've learned that there's a wealth of knowledge out there that's not very well publicized or not readily available unless you really dig deep and look about Southern gardens and what does well.*

Work experience. Steven's work experience has been a tremendous resource for gardening information. His work has exposed him to many different gardening situations as well as people. His work has highlighted the shortcomings in his education and has stimulated him to further his horticulture learning. He described how his work has inspired him to further his education:

> *Getting into the landscaping end of it has influenced me a lot because the bulk of what I do and what the Grower's Market does is landscape*

renovation. We constantly see things done wrong. We very rarely go out to a brand new house on an empty lot in a new subdivision and do it from scratch. We're almost always doing a renovation, and that is very frequently a renovation of a landscape that was installed 5 or 10 or 15 years ago and was done poorly. There's a lot of bad landscapers out there that plant for the moment, that plant right then and are the wrong plants later. They're either something that had no chance of surviving where it was planted or was gonna get just tremendously too big or it was the wrong plant for the person. The person, the homeowner, needs, interest, likes, dislikes were not taken into account, everything. All of this constantly makes me keep learning my plants and how to use them.

Plant societies. Steven belongs to several plant associations but finds few of them valuable learning resources. He attends their conferences in hopes of gaining new and progressive information but finds that for most associations this is not the case. He explains:

You know I think that the professional associations, you know particularly in this area, are just kind of lacking. I mean I've gone to them repeatedly for years, for several years now, so I've seen what they're like. I'm really kind of disappointed with what's available. For instance, the Tennessee Nurserymen's Association, like the short course and stuff, it seems like it's continually geared towards the constant flow of new people in the business. There's dozens of new landscapers and nurserymen and so forth coming in and going out each year and it seems like it's geared more towards the big boys. You know, bigger scale production, which it needs to serve the whole group. Plus it's just kind of dry sometimes, and it's just not that new, not that progressive and I think the trade shows for instance, it's the same thing every year, it's never anything new.

Steven annually attends one plant association's conference which he has found to be of educational value:

I enjoy going to the conference because there's a lot of new concepts always introduced and new plant materials and a broad range of people that's very interesting.

Steven is primarily interested in plant associations and societies for the educational information they can provide; rather than to make connections with other gardeners.

Working with other professionals and talking with gardeners through his work is enough of a connection to others.

The Agriculture Extension Service. As a professional horticulturist, Steven has found the Agriculture Extension Service to be a valuable learning resource but feels he knows much more about his field of work than the county agents:

> *I use it but not that much, because I've usually found that with calling Joe Dyer [county agent], usually what he ends up doing is going to somebody else, you know going to some other expert on it, and nine times out of ten I know that person or have met them or know that resource and I can just go straight there myself.*

Since he finds the county agents limited, he bypasses them as a resource and goes directly to the horticulture Extension specialists who work at the university and who provide leadership for professionals in the different areas of horticulture. He makes more extensive use of the entomology and plant pathology extension specialists because he feels his knowledge is lacking in this area.

> *I use the Extension Plant Pathology and Entomology Lab a lot. You know anytime a customer comes in with a leaf or a branch or something that's got some insect damage or fungal damage or something like that. I don't know what those things are.*

The Meaning of Gardening

Gardening holds a tremendous amount of meaning for Steven for it allows him to combine his profession with his hobby. For Steven, gardening is both a relaxing and informal hobby and profession which suits his style. He explained what he likes about gardening:

> *I like being outdoors, I don't like being cooped up inside stuck behind a desk. I like a little bit more casual lifestyle and I'm not, I don't like crowds, I'm not a big people person really.*

Gardening interacts with Steven's spirit. He is drawn to gardening for it's beauty and the peaceful feelings it gives him. He enjoys time alone in a garden where he feels he can escape daily pressures. How plants grow and the psychological effect they have on people is very intriguing to Steven and helps sustain his gardening interests.

William Peterson

William, aged 72, is a retired civil engineer who has enjoyed gardening all of his life. He has been involved in all types of gardening including vegetables, annuals and perennials. However, since his second divorce in 1985, where he had to give up a beautiful garden he had worked hard to develop, he has not had the desire or interest to garden around his present home. Instead, his primary gardening outlet has been two community plant associations where he has given a great deal of his time and energy.

Gardening Background

William grew up in an orphanage. He was introduced to gardening when required to work in the orphanage's vegetable garden. Other children found such work unpleasant but not William. He always enjoyed his time alone in the garden as well as the bountiful harvest that was the result of his hard work. He took great pride in the vegetable garden and the many fine vegetables he was able to produce. He described this experience:

> *I guess when I was a kid when I had to tend to the weeding of the vegetable garden beds that we had there in the back yard. It allowed me to have time by myself, while I was out there weeding. I didn't grudge about it, I went ahead and did it. The pleasant experience came from the fact that you could harvest something that was edible in the garden and because I was involved in keeping the garden this made it more personal.*

William has had several different gardens throughout his adult life. The first was around his home in Texas where he began to raise his family. Even though the dry, warm Southwestern climate made it difficult for him to grow any spectacular plants, gardening was an activity he enjoyed. Honeysuckle and petunias were the two most successful plants in his Texas garden. William inherited a much more interesting and exciting garden when he bought a home and moved to upstate New York. The mild summer climate of New York opened William to a whole new world of gardening. Included in the property was a perennial garden of which he spoke very passionately. He described the garden:

> *I have had several gardens of my own, and in fact I inherited one spectacular garden up in western New York when we bought the home that we bought up there. It was out in the countryside and it was a very beautiful garden. In fact it was created by a polish family and in fact he was a survivor of the Bataan Death March of World War II. And the perennial garden that they had created there was absolutely spectacular because it started with the poppies in the early spring and wound up with the chrysanthemums in the late fall. And it was perhaps my first experience with an all perennial garden and in the couple of years that we lived there, there was little that we could do although we did create a very large tulip bed.*

In the cooler climate of New York, William found it easier to grow vegetables and his interest in vegetable gardening was consequently revived.

> *The vegetable garden that we had up in western New York was spectacular. I produced corn, tomatoes, broccoli, just everything!*

William's interest in vegetable gardening continued after he was transferred to Tennessee from New York. He had such passion for his vegetables he grew, that part of the settlement in his last divorce included tomatoes he had canned from his garden.

> *I think 1982 was a spectacular year for producing tomatoes here. In fact,*

in 1985 when the settlement was made, canned tomatoes were part of the settlement. We had canned over 250 quarts of tomatoes. I don't know, I guess we had 6 plants and it was a year that was fabulous for tomatoes because our tomato vines grew up over the cages and then on down you know. And they were growing fantastic and it was a fantastic year for tomatoes.

With his divorce, it was difficult to give up his last garden. Having lost his enthusiasm for gardening; he has done little gardening around his present home. The routine maintenance of his landscape keeps him busy, but he has done nothing to change or personalize the landscape as he did with other properties he owned.

I'm ashamed of the present piece of property I have because I've not done anything to it, to landscape it. I have neglected my own property and I haven't worked at bringing it up to what my previous pieces of property were. Even though it isn't landscaped, it does keep me busy. I think I've spent about four days now raking leaves, raking and blowing leaves that is.

As an alternative to putting energy and time into gardening around his home, William devotes his interests and talents to two local plant associations. Both organizations are young and have benefitted greatly from his volunteer efforts. He serves on the board of both organizations and has been instrumental in their rapid growth.

Photography, particularly of plants, has helped William fill the void of reduced gardening. He has a passion for photographing flowers and is always on the lookout for beautiful specimens wherever he goes. He almost always has his camera in his car, so it is always available for use. He explained his photographic interests:

I guess since the time I started playing around with cameras, I've always been interested in taking flower pictures wherever I've been. Usually, as I walk through the gardens I will only take pictures of what I consider a perfect flower. It may not be the perfect flower in other people's minds but it is in mine, you know.

Connection To Others

William enjoys other gardeners who share his interests and values. He has found a connection with these other gardeners through involvement in two local plant societies. He explained his desire for this connection:

> *I enjoy people who are interested in growing things, and I meet such people by being involved in these societies. I like being around others who value the same things I do.*

William uses the Trial Gardens to connect with others. He values the educational opportunities the Gardens offer visitors and promotes the Gardens whenever he can. Through the display of his photographs, he is able to inform the public of the Trial Gardens and what they offer. He expressed his interest in advancing the Gardens:

> *I am interested in promoting this particular garden because I see value here over and above the beauty. I enjoy sharing it with different people I meet.*

William As Learner

Although William has spent little time developing the garden around his home, gardening is an important aspect of William's life and dominates a good portion of his time. To sustain his gardening interests he works continuously to further his education through a variety of resources which include: visiting gardens, books and magazines, The Agriculture Extension Service, plant societies, and The University of Tennessee Trial Gardens.

Visiting gardens. Whenever William travels he deliberately tries to visit gardens which are new and different to him. "I try to visit gardens whenever I can." He finds them to be a good source of garden design ideas as well as a way of learning new plants.

Books and magazines. William doesn't subscribe to any magazines which are exclusively about gardening. Instead, he subscribes to a magazine which addresses Southern lifestyles and includes information on Southern gardening. It is important to him that the magazine be tailored to Southern gardening.

> *I enjoy getting Southern Life because they usually have a nice section on gardening that is applicable to this area.*

William enjoys reading books and getting ideas from the pictures. As he states "I do have quite a collection of gardening books." He purchases books for sources of garden design ideas.

Plant societies. Plant societies are a tremendous gardening outlet for William. Like photography, they have been a gardening substitute for him since his divorce. He enjoys being involved with plant societies because he can share common interests with members and help improve the environment.

> *The thing is that with so dagon much ugliness that exists around us sometimes I think it helps if you get in with people who are creating beauty and want to spread that beauty to other people.*

William has devoted most of his spare time to the development and growth of two community plant societies and has been on the board of directors of both societies since they originated. His photography interests have helped both organizations grow. He has used his photographic talents to reflect the societies' activities in educational displays. These educational displays are used at different civic events to inform the public of the societies and their activities. William always takes responsibility to set-up and tear-down these displays at such events as fairs and lawn and garden shows.

The University of Tennessee Trial Gardens. William usually visits the Trial

Gardens approximately twenty times a year. As he states, "I don't really count, but I probably visit somewhere between 15 and 20 times throughout the year." His love of plant photography frequently draws him to the Trial Gardens.

> *Generally my visits to the Gardens have been specifically for taking pictures, whether I take them or not. If I happen to be in the area. I might visit the Gardens to see whether it is worthwhile coming back the next day with my camera, if I happen to be down in the area without my camera.*

William has used the Trial Gardens and his love of photography to learn about gardening and plant varieties. When he visits the Gardens and photographs different plants, he uses a mini-tape recorder to record his comments and the identity of the photographed plants. After developing his photographic slides, he numbers and files the slides, and records the names of each plant in a log book. This collection enables him to study the plants, learn their names, and keep track of his photographs. He explained the use of this learning method:

> *What I was doing, I was taking a copy of your Garden brochure or the book, listing what the flowers were, and then marking off which frame was which flower, so that I have the name of the flower. Right now, this summer, I did get one of these small tape recorders to take with me so that I could call off you know exactly what flower it was that I was photographing. Then I record in a log book the names of each plant photograph. I can study the plants and names anytime I want to, not just when I visit the Garden. I have learned a lot this way.*

Through observation he has learned about the performance of different types of flowers in this region. He has determined that annuals display their color in the garden for a longer period of time than perennials. He explained:

> *The thing that I've learned is that there are so many flowers that do well in this area over a very, very long period of time. Perennials are fine, but they have a very short show period, each in its own way has a very short*

show period. But the annuals they have such a long show period that and they can be spectacular during that show period.

William has used the Trial Gardens to determine which plants grow well in the South and which ones he would prefer to have in his own garden. In particular he is very interested in learning unique, different flowers he has never seen before, which perform well in the South and are showy all season.

Taking pictures has been a major interest in visiting the Gardens for me but also I'm really interested in seeing all the unique, unusual flowers you have. There are times when you do have very unusual flowers in that Garden, because I had never seen the Gardenia until I'd seen it down here in the Gardens. And then of course, let's see, you had the Abelmoschus, and of course it's sitting down there just about hugging the ground but it's a very beautiful little flower. I'd love to have those plants in my garden.

The Meaning Of Gardening

Gardening has a spiritual significance for William. Throughout his interview he made frequent mention of the positive emotions and feelings he has for gardening. Whenever he spoke about such feelings he would smile and have a glow about him indicating the depth of his passion for the activity. William is driven to garden in order to create beauty in his life. "I have a desire to have something beautiful in my surroundings and I get a sense of fulfillment out of creating gardens."

Being in a garden enables William to mentally escape the world around him. He is able to tune out any troubles or stress he may be feeling and immerse himself in the beauty of the garden.

Well, you escape from the traffic. You can escape from what's happening in the world around you and all of those things because it just takes your mind off of what the real world is doing out there.

Photography is a tool that William uses to support his spiritual connection to

gardening. Through photography he can feel a connection to gardening all year long. During the winter months he occasionally views slides of his garden photographs to "chase the blue days of winter." Seeing the beauty and color of garden photographs, particularly in the dead of winter, is a pleasant reminder of the positive feelings he experienced while visiting a garden. Viewing his photographic slides has the same effect upon him as his actual visits, they are uplifting to his spirit and can help him mentally escape the world around him.

Chapter Summary

The public garden used for this study was the University of Tennessee Trial Gardens. It offers unique learning opportunities for visitors because of it's plant introductions and it's evaluation of plant performance in the region. For this study, three male and three female participants were selected and interviewed. These six individuals represented serious gardeners in that they gardened on a regular basis, belonged to several plant associations, read gardening books and magazines, and visited other gardens. These participants were members of the Friends of the Gardens organization and each had visited the Trial Gardens at least three times during the year before the study. In the chapter, portraits of the participants were presented. Portraits highlighted each participant's gardening background, connections to others through gardening, learning resources used with gardening, and the meaning of gardening for each individual. Even though unique differences exist among participants, they shared common threads in their perspectives and experiences of gardening. These common threads of their gardening experiences will be presented in the next chapter.

CHAPTER 5

CONSTRUCTING AN AVID GARDENER

A garden that one makes oneself becomes associated with one's personal history and that of one's friends, interwoven with one's tastes, preferences, and character, and constitutes a sort of unwritten, but withal manifest, autobiography. Show me your garden provided it be your own, and I will tell you what you are like.

- Alfred Austin (1990)

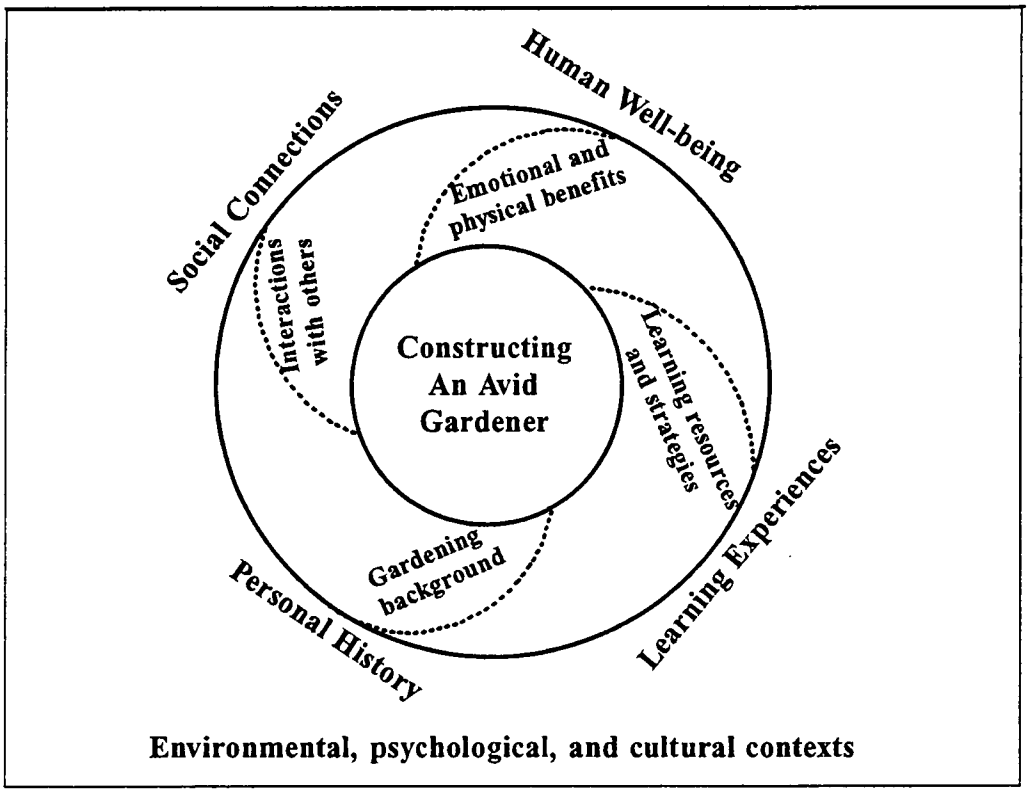
The role of plants in providing food, clothes, shelter, and oxygen has long been understood. Until recently, however, the less tangible physiological, psychological, and social benefits of plants have not been recognized. The role that gardening plays in one's life is multifaceted. There are many aspects of the process of gardening that resonate profoundly in one's being. Despite individual differences, gardeners share common beliefs and actions through gardening. The avid gardeners in this research viewed themselves and their gardening world in four dimensions. These dimensions represent prominent themes of gardening actions, experiences, and beliefs delineated from participant's interview data. These dimensions are the personal constructs through which avid gardeners experience their plant world. Personal constructs, according to Candy (1991), provide the framework through which, and into which, all new learning is appropriated. Personal constructs are part of the theoretical concept of constructivism which is concerned with how people individually make sense of their worlds and how

they create personal systems of meaning that guide them throughout their lives (Candy, 1991). It is a different view of how people make sense of their realities. Constructivism views learning as an active process of constructing meaning and transforming understandings rather than the appropriation of previously devised labels and categories.

From this research a conceptual model of an avid gardener's world has been delineated. This model reflects two major components. The first component reflects the environmental, psychological, and cultural contexts of a gardener's world. The second component reflects the dimensions of an avid gardener's world which represents their gardening experiences, practices, and education. The dimensions of an avid gardener through which they experience their gardening include: 1) social connections, 2) human well-being, 3) personal history, and 4) learning experiences. Figure 1 presents a conceptual model and suggests how one thinks and acts as an avid gardener. The model is grounded in a dynamic relationship between an individual's environmental, psychological, and cultural contexts and the actions and beliefs in the four dimensions of their gardening world. The model reflects past and present life experiences, values, and other internal forces within the individual. In addition, the model reflects the external forces in an individual's life, the societal/cultural resources, beliefs, and values, as well as the social relationships, physical surroundings, and situations. The model represents the dynamic nature of a gardener's make-up and the major dimensions in their lives which influence their gardening. The social connections dimension represents the social interactions through gardening of participants. The human well-being dimension represents the emotional and physical benefits participants found through their gardening.

The personal history dimension includes the gardening background of participants and the role it plays in their gardening; and finally the learning experiences dimension involves the learning resources and actions participants used to extend their gardening knowledge.

Figure 1. Conceptual Model of an Avid Gardener's World



Each participant was unique in how they acted as a gardener and how they used a public garden. The uniqueness reflected their contextual past history and their present world with internal and external forces. The context is the grounding in which they choose to act in specific dimensions of their gardening world and how they engage in the

dimensions. To understand the dynamic interaction of the gardening world contexts and dimensions, the researcher will draw upon an example of Claire and how the environmental, psychological, and cultural contexts affected her gardening and how she perceptualized and acted in each of the four dimensions of her gardening world. In considering the influence of the environmental context, such things as season and time of year may affect the choice of learning resources and strategies one uses, the gardening strategies they choose to enhance their well-being, and the social activities in which they partake. For example, during winter months, when hands-on activities in the garden are minimal, Claire indulges more in reading or other indoor activities. During the growing season, Claire has visited the Trial Gardens numerous times in comparison to the few times during the dormant season. In considering the influence of the psychological context on Claire's gardening, it too will affect the choice of learning resources and strategies, the gardening actions she chooses to enhance her well-being, and the social activities in which she partakes. For example, upon the death of a family pet, when Claire had been psychologically distraught, she used her gardening to uplift her emotions and put her feelings in perspective. At another time when Claire had felt mentally taxed by her life's activities, she used a visit to the Trial Gardens to 'mentally' escape and renew her outlook. Likewise with the influence of the cultural context upon Claire's gardening. The cultural context affects the choice of educational resources and strategies, the gardening activities one chooses to enhance their well-being, and the social activities in which they partake. As an example, Claire has observed the gardening activities of the Trial Garden personnel. Transplanting several large trees and shrubs was

being done in the Trial Gardens to make room for expansion. Claire choose to study this activity to determine whether it would be an appropriate technique for her own gardening. In this way, the cultural context of the Trial Gardens affected Claire's gardening. Each of the contexts discussed affect the dimension of her gardening world in which she choose to engage and affects how she has conceptualized herself as a gardener. This model provides a way of understanding how gardeners view themselves in their gardening world, what they seek out to learn, and choose to experience in their gardening.

This chapter will describe the findings from this study of avid gardeners and how they make meaning of experiences in a public garden and in their gardening practices. The findings will be presented as categories within the four dimensions of personal history, social connections, human well-being, and learning experiences. These dimensions, which emerged from inductive analysis of interviews, are discussed using quotes to support the categories.

Personal History

All gardens are a form of autobiography.
- Robert Dash (1993)

The personal history dimension reflects the unique story of each participants' gardening history. The underlying message was similar for all participants. Data about gardening background has been broken into three common categories including;

introduction to gardening, key life role and learning role in gardening, and gardening interests. Table 2 summarizes the gardening background data of each participant.

Table 2. Gardening Background of Participants

Claire	Introduction to Gardening - gardened as child - introduced by father Key Life Role and Learning Role in Gardening - Master Gardener - gardens as hobby - professional horticulturist - member of numerous plant associations Avid Gardening Interests - dwarf conifers - new plant introductions - flower and bulb gardening
Colleen	Introduction to Gardening - gardened as child - introduced by father Key Life Role and Learning Role in Gardening - Master Gardener - gardens as hobby - works as an accountant - member of 4 plant associations Avid Gardening Interests - new plant introductions - flower and herb gardening
Jonathan	Introduction to Gardening - gardened as child - introduced by mother Key Life Role and Learning Role in Gardening - Master Gardener - gardens as hobby - member of 2 plant associations - retired administrator, has part-time grounds maintenance job Avid Gardening Interests - greenhouse gardening - new plant introductions - flower and herb gardening

Table 2. Gardening Background of Participants (cont.)

Maddie	Introduction to Gardening - gardened as child - introduced by parents Key Life Role and Learning Role in Gardening - gardens as hobby - professional horticulturist - member of 3 plant associations - full-time graduate student in botany Avid Gardening Interests - flower gardening - new plant introductions - flowering trees and shrubs
Steven	Introduction to Gardening - gardened as child - introduced by parents Key Life Role and Learning Role in Gardening - gardens as hobby - professional horticulturist - member of 5 plant associations Avid Gardening Interests - new plant introductions - antique plant varieties
William	Introduction to Gardening - gardened as child - introduced by orphanage Key Life Role and Learning Role in Gardening - retired engineer - gardened as hobby in past - member of 2 plant associations Avid Gardening Interests - plant photography - new plant introductions - flower and vegetable gardening

Introduction to Gardening

A common thread participants shared was gardening since childhood. All participants had been introduced to gardening during their childhood by a parent except

for one who grew up in an orphanage. Positive gardening experiences at a young age are what motivated participants to continue gardening into their adult years and for some to choose it as a career. This notion is not new to the literature. A study by Clark and Manzo (1988) explored factors which influenced participation of community gardeners. They found differences between gardeners and nongardeners in terms of previous gardening experiences. Their gardener study participants were motivated to garden as a result of their positive, previous gardening experiences, while the nongardener participants had little to none previous gardening experience. Their results indicate people are more likely to garden if they have positive previous gardening experiences.

For this study, gardening provides a positive link to previous childhood gardening experiences. Maddie describes her introduction to gardening and how it is a connection to her past:

> *I've been a gardener for as long as I can remember. I can remember helping my mother garden. I remember the Snapdragons and the Dinner-Plate Dahlias. And to me, when I grow a Snapdragon I grow them because it reminds me of my mother. And the Dahlia, those are my two favorite plants and the Pansies. Those were the things as a child I remember. She must have had millions of other things in there but those were the things that stuck with me all these years.*

Jonathan also remembered his introduction to gardening by his mother, as well as the plants they grew in their garden:

> *I've been a gardener since as early as I can remember. My mother was a gardener and I started, I can't remember the exact year, but I know that I was very young. I remember growing with her all kinds of annuals every year and gladiolus.*

Key Life Role and Learning Role in Gardening

All participants were deeply engaged in gardening at the time of their interviews. One criteria for participants to be selected for the study was that they be serious gardeners, meaning that for this study, they regularly engaged in gardening and were a member of the Friends of the Gardens organization. However, what was surprising to the researcher was the integral role gardening played in each of the participants lives. For all participants, including the professional horticulturists, gardening was an important, dominating activity in their lives. They almost daily engaged in some gardening activity, be it reading, weeding, visiting a garden, or attending a plant association meeting. For example, gardening commanded most of Colleen's spare time. When asked how gardening compared to other activities in her life, she commented:

> *I'm into gardening pretty heavily right now. Almost everyday I do some garden thing, like just yesterday I went to one of my herb society meetings and today I stopped by a nursery to get a few plants.*

Gardening education was also a component of each participant's gardening involvement. All participants whether through the Master Gardener program, through enrollment in a college program, or through continuing education in plant associations and other organizations had pursued some form of gardening education.

Membership in gardening associations was another aspect of key gardening learning roles shared by participants. All participants were active members in at least two associations and one was involved in as many as eleven. Claire shared her reason for being involved in so many plant associations:

> *I don't mean to down-grade anything but I think plant societies are much superior to other horticultural organizations, because they really teach you*

the requirements of that specific plant, which I think can be across the board, you know if you start learning fertilizers and soil compositions and things like that. If you're going to broaden your experience you really do need to try to get around and see what's being offered. By going to these national conventions and national meetings and regional meetings of plant societies and things like that you can learn an awful lot.

Avid Gardening Interests

Though interested in gardening in general, participants had specific plant interests. One interest participants shared was learning plant cultivars which were new to them. Whether new to the market or new to their knowledge, participants were interested in this gardening information. As an example, Colleen enjoys visiting different gardens to discover plants new to her:

I like to visit other people's gardens, that's one place I get ideas and usually can learn a few new plants. And then I've gotten ideas too out at Natural Park. I want to get some Plumbago and Dames Rocket which I discovered out there.

Jonathan likewise expressed an interest in learning plants which are new to him:

The flowers [in the Trial Gardens] are always very interesting because there's so many that are different and new and that's what I'm into.

Plant passions were a common thread that participants shared as well. All participants had a passion or deep interest in learning as much as possible about a specific group of plants such as herbs, flowers, trees and shrubs, and vegetables. Plant passions added meaning and focus to their gardening activities. As unique and different as each participant, so were their plant passions. Plant passions are included in Table 2 and listed under avid gardening interests. Jonathan described his perennial plant passion and his interest in growing them in his garden:

I've become a perennial freak since then [volunteering] and because of you

people [the Trial Gardens] and I now grow Achillea, the big golden one, and as many other perennial plants as I can possibly squeeze into my yard.

Maddie also had a plant passion. She is particularly interested in learning trees and shrubs which have beautiful, colorful blooms. She explained:

I'm particularly interested in learning woody ornamentals, especially those with awesome blooms. To me, a plant is not very attractive unless it has spectacular blooms. Sometimes, I mean I like the texture and the size and all that kind of stuff but I'm always looking for color so I'm always looking for the things in bloom.

Summary of Personal History Dimension

The first major finding of the study, then, was that gardeners had a particular gardening history which originated during their childhood and was filled with positive experiences. These early, positive experiences motivated participants to continue gardening into adulthood, where gardening played an integral role in their daily lives. Participants had engaged in some form of garden education whether in college, plant societies or The Agriculture Extension Service Master Gardener Program. Pursuing informal and formal gardening education was important to these participants. This continued desire for learning encouraged their daily involvement in a gardening activity. Participants each had specific plant interests where they had a passion to learn as much as possible about that plant. These plant passions brought focus to their gardening activities.

Social Connections

You don't have a garden just for yourself. You have to share it.

-Augusta Carter (1993)

Gardening promotes social interactions by providing opportunities for human interactions. This dimension represents the social development of participants through their Gardening activities. Gardening as a source of social development was a common thread among participants as they discussed their experiences from visiting a pubic garden. This concept is not new to the gardening literature but is not well documented. As noted by C.A. Lewis (1992), "Horticulture and gardening are essentially human activities; they serve as an umbrella to bring together all people who have an interest in plants." Social development through gardening was a way for participants to continue their education as well as connect with others who share their interests and values. Gardeners shared common threads in the way they formed social connections through their gardening. Activities for social connections shared by participants included: membership in plant associations, visiting gardens, volunteer work in public gardens, educating others, and career as a horticulturist. Table 3 represents the gardening activities which participants used for social interactions.

Connecting Through Plant Associations

In discussing themselves as gardeners and learners, it became apparent that plant associations for participants were more than just a way to continue their education.

Three of the participants used plant associations as a means of connecting with others.

Table 3. Gardening Activities Which Promote Social Interactions

Claire	- Visiting a garden with others - Membership in plants associations - Career as professional horticulturist
Colleen	- Volunteer Work - Membership in plant associations
Jonathan	- Volunteer work - Educating others - Visiting a garden with others
Maddie	- Educating others - Visiting a garden with others - Career as professional horticulturist
Steven	- Career as professional horticulturist
William	- Membership in plant associations

Plant associations allowed these participants to interact with others who shared their gardening interests. William shared his reason for being involved with two plant associations:

> *Well it's sort of like the idea that birds of a feather like to flock together. I want to be around people who have interests similar to what I have, ones who get a sense of fulfillment out of creating gardens like I do.*

Claire enjoys the new people she is able to meet through her involvement with different plant associations and the common interests she shares with other members:

> *Next spring their [The National Rock Garden Association] going to have in May, their going to have the National Convention there. I'm going to help with that and it's just a wonderful way to meet new people and you can come from all walks of life but you've got that common denominator.*

Likewise for Colleen, plant associations have been a good way for her to meet and connect with others. She is intensely involved with two herb societies and part of the

benefit is as she stated:

> *The people. I really like the people I've met through the herb societies, it's been a great way to meet others who have my same interests.*

Connecting Through Visiting Gardens

Social development through garden visits with others was a common category that three participants shared. Visiting and sharing different gardens with family and friends is an activity these participants found to strengthen friendship and family bonds. Jonathan used the Trial Gardens to connect with his family and friends.

> *Occasionally Nancy [wife] and I and Jimmy [grandson] will come over and we've talked friends who actually work at the university who don't know about the Gardens into going and brought them over and showed them. We always enjoy checking out what is new and what has changed and many of friends were excited to discover the Gardens.*

Sharing a garden visit is a meaningful way for Maddie to interact with her family. She explains how she has used the Trial Gardens for this purpose:

> *I took my father-in-law and step mother-in-law to the Trial Gardens about a month ago and the reason is he's a hobby horticulturist and I was trying to arrange something for everybody, that we all could share. He loves to look at different plant materials just like me. Visiting there was something we could share that we have in common.*

Claire also uses a garden visit to connect with friends and to share gardening interests. She noted:

> *I have friends coming from Ohio and most of them are interested in horticulture and it's just a wonderful thing to show them. I've taken foreign visitors there. I've taken a lot of visitors there. So sharing that Garden is one of the things that draws me to it. And I got to know you and ...[other personnel], people like that through the Gardens.*

Connecting Through Educating Others About the Trial Gardens

Some participants found social interaction by informing and educating others

about the Trial Gardens. Acting as a Garden ambassador, telling others about the Gardens and sharing their experiences in the Gardens, was a meaningful way for three participants to relate socially. These participants had a strong desire to share the Gardens and would go out of their way to inform others. Jonathan would make conversation with people he met through his job by telling them of the Trial Gardens. He explained how important this was to him:

> *I tell so many people that I meet about the Gardens. That's been one of my big things, to get more people interested in the Gardens.*

Maddie had strong feelings about the educational opportunities in the Gardens and volunteered to give Garden lectures and tours to interested groups. She explained about her interest in sharing the Gardens:

> *I've got a place that I can take the public to and kind of promote the Trial Gardens... you know get people to realize that things are changing and happening and there's stuff here for the them to use and learn.*

Steven has acted as a Garden ambassador by recommending his customers to the Garden. He regularly informed his clients of the Gardens and recommended they visit to educate themselves about design and plant materials. He explained how he has directed clients to the Gardens:

> *In one way I use the Trial Gardens, an indirect way, is I refer customers. You know when they're asking what things would be good, you know what should I put in my garden, you know I want flowering plants but I don't really know what I want, I say why don't you go down there and get the list, go through the Gardens, and make notes and pick out things that you like. Do the same things I do, go back through the season and see what looks good at different times. They can go down there and pick out the plants they like and then we can see about incorporating them into their landscape. It's a terrific way of dealing with the uneducated public as well as informing them of a great gardening resource.*

Connecting Through Volunteer Work

Two participants found volunteer work to be a vehicle to connect with other gardeners. These participants noted that in addition to gaining hands-on experience, their volunteer work introduced them to other gardeners. Colleen recalled that meeting new people was a major reason she enjoyed her volunteer work:

> *Well I met a lot of people that way, through volunteering. I think that was part of the fun of being a volunteer, that I met so many nice people.*

Jonathan's volunteer work introduced him to new people as well and helped him network for information and ultimately a part-time job:

> *My volunteering in the greenhouses let me meet you people [Garden personnel] and led me to network through you and the Master Gardener program to get my part-time job with the city grounds. There are so many resources I use now, all the time, because of volunteering in the Gardens.*

Connecting Through Gardening Career

On-the-job contacts, for three professional horticulturists, were a means of socially interacting with other gardeners. For these participants, their job required them daily to interact with other gardeners. Working to assist gardeners with their problems and interests enabled the professional horticulturists to meet and form meaningful relationships with gardeners who shared their interests. Steven explained how his job was an effective way to meet gardeners:

> *I talk to people a lot. Everyday I talk to customers, to gardeners, and I meet all kinds of people. The Grower's Market has been a good avenue to get to know others, especially the serious gardeners.*

Summary of Social Connection Dimension

The second finding of this study was that avid gardeners experienced important social interaction through a gardening activity, be it attending a garden club meeting, volunteering in a garden, visiting gardens with family and friends, or pursuing a career as a horticulturist. Social interactions through gardening enabled participants to extend their education as well as form relationships with others who shared their interests and values.

Human Well-being

> *Love of gardening is a seed that once sown never dies, but always grows and grows to an enduring and ever-increasing source of happiness.*
> - Gertrude Jekyll (1993)

This dimension represents the emotional and physical benefits that participants received through their gardening. There is a new body of research which seeks to understand and illuminate plant and human well-being interaction. Lewis (1992) argues that gardening is a process which leads to subjective personal feelings. The gardening process conjures a wide range of human responses which generally enhance the emotional well-being of a person. Lewis documents the benefits of people and plant interactions in a wide range of community settings including low-income housing, schools, and prisons. He also indicates more research is needed to understand and quantify its effects in creating human well-being. Table 4 presents the personal human well-being benefits from gardening. Key themes in this category include; 1) gardening and its beauty; 2)

gardening and its emotions; and 3) gardening and its connection to other interests.

Table 4. The Personal Human Well-being Benefits of Gardening

Claire	Gardening and its Beauty - Satisfies desire to create beauty in life Gardening and its Emotions - Renews outlook on life - Provides a mental escape
Colleen	Gardening and its Beauty - Satisfies desire to create beauty in life Gardening and its Emotions - Provides feelings of success - Mentally relaxing - Mentally energizing Gardening and its Connection to Other Interests - Enables physical exercise - Allows connection with nature
Jonathan	Gardening and its Beauty -Satisfies desire to create beauty in life Gardening and its Emotions - Builds pride - Strengthens self-esteem - Provides sense of success Gardening and its Connection to Other Interests - Social outlet
Maddie	Gardening and its Beauty -Satisfies desire to create beauty in life Gardening and its Emotions - Mental escape - Builds confidence - Strengthens self-esteem - Provides sense of success Gardening and its Connection to Other Interests - Link to past - Artistic expression

Table 4. The Personal Human Well-being Benefits of Gardening (cont.)

Steven	Gardening and its Beauty -Satisfies desire to create beauty in life Gardening and its Emotions - Mental escape - Renews outlook on life Gardening and its Connection to Other Interests - Link to past
William	Gardening and its Beauty -Satisfies desire to create beauty in life Gardening and its Emotions - Mental escape - Renews outlook on life Gardening and its Connection to Other Interests - Outlet for photography interests

Gardening and its Beauty

People have different feelings about and motivations for gardening. Participants in the study spoke about a desire for beauty in their lives. Gardening was a way for participants to create beauty or a sense of paradise in their lives. In a world where one feels little control over their environment, gardening provided such an outlet, especially in creating beauty in one's life. Relf (1992) reports of an unpublished survey by R. Kaplan (1976) where respondents found the sense of creating beauty to be a significant factor in their satisfaction for gardening. The study acknowledged that an important reason for gardening for many individuals is for the beauty they feel they create.

Colleen felt she had been able to create beauty in her life through her gardening. She expressed her enjoyment in creating beauty around her home through the many different annual beds she has added:

You know there's a lot of beauty in gardening. I enjoy creating beautiful

spots around my yard with plants and flowers and color.

Gardening has been a rewarding activity for Jonathan as well for the sense of beauty he has been able to create in his life. He explained:

> *Well, gardening is just plain pleasure. It's rewarding as far as I'm concerned to be able to work in the garden and end up having something that is very nice that other people like as well. People slow down when they go by and I stand there [in my garden] with a big smile on my face sometimes.*

Creating beauty in her life was one of the major reasons Maddie gardens:

> *To me, the reason why I garden is because I love the beauty of it and I love watching it grow. But mostly what my goal is, is to have everything as beautiful as I can make it whether that means a lot of color, a lot of foliage or whatever.*

The beauty of a garden can conjure pleasant memories and provide a link to ones past. Gardening stimulated these feeling for Maddie. She was drawn to gardening to recreate the beauty from her childhood she remembered in her parents gardens:

> *I went back to gardening to try to create that kind of beauty that my parents did so effortlessly, I thought they were effortlessly. Their gardens were magnificent and I have never forgotten them.*

In addition to discussing the desire to create beauty in their lives, participants spoke about the emotional benefits they experienced through their gardening.

Gardening and its Emotions

This category represents the affective or emotional benefits participants experienced through their gardening. Those who engage in gardening have found it to be a source of emotional renewal. Relf (1992) describes this emotional connection to gardening as being spiritual in nature. She has explored the psychological literature to try to explain this aspect of gardening. She suggests the following statement by

Schroeder (1991) to explain the use of the term "spiritual" in relation to people and plants:

> *"Spiritual" refers to the experience of being related to or in touch with an "other" that transcends one's individual sense of self and gives meaning to one's life at a deeper than intellectual level.*

Recent research as reviewed by Relf, documents the spiritual aspects of interaction with people and plants (Schroeder, 1991; S. Kaplan, 1992; Ulrich, 1979; Kaplan & Kaplan, 1982; Ulrich 1983; Ulrich and Parsons, 1992). These studies offer a conceptualization of the spiritual phenomena of gardening but still leave much for us to try to understand. More scientific inquiry into this area of gardening will extend our understanding of people-plant interactions.

This current research found that gardening interacts with people in such a way to strengthen self-confidence and build self-esteem. This emotional benefit has been true for Maddie as she continued her horticulture education and enhanced her gardening knowledge and skill:

> *I'm becoming more and more successful at it [gardening] and with all things, as we are successful at whatever we attempt, we feel good about that. I mean it's a circular thing, and so we continue it because being a success is a whole lot more fun than being a failure. We tend to move away from the things that we cannot for whatever reason be successful in and we move towards the things that we can in life. So I keep gardening and learning as much as I can about it to just keep getting more and more successful.*

Gardening revitalizes and energizes human emotions. It renews one's outlook on life. This notion was true for several participants. Through their gardening, participants experienced feelings of rejuvenation and a sense of 'clearing the mind'. To uplift and rid themselves of depressed mood, participants would engage in a variety of gardening

activities. Claire explained this role of gardening in her life:

> *To me it [gardening] puts all of life in perspective, that there's a season for everything and things do you know flourish and then they die. And I think it helps me encounter death more than anything else, the garden does, because it shows there's a plan there. I think that's why I like bulbs so much because you actually see this little thing growing in the ground and you know that there's a promise of spring. And whenever I teach children that's what I try to get across to them you know. We get impatient but there has to be a time that things rest and they will come again.*

Colleen experienced an interaction with her emotions and plants. She recalled an experience in the Trial Gardens which left her feeling renewed:

> *I can remember in particular one spring walking along in the Gardens. You've got a lot of things that do come out in spring, and it was just real pleasurable to me and colorful and it got me all pumped up and made me want to go home and go out and buy some new plants and flowers and garden.*

Renewing his emotional outlook through gardening was a common experience for William as well. He shared such an experience from visiting the Trial Gardens:

> *Some how or another walking among the flowers is sort of uplifting to the spirit, it sort of, it completely takes your mind off of what is going on elsewhere, and you just sort of focus right in on the present. You forget about your troubles.*

William believes that colors in a garden lift his emotions:

> *Colors, and it seems like the mix of colors seems to be uplifting to me and creates a sense of well-being. Creates a sense of well-being and of course with the sense of well-being comes the sense of joy, and all is right with everything in the world.*

Gardening can heal emotions by enabling a person to mentally relax and escape. Participants spoke about feelings of relaxing and escaping through their gardening. Their well-being was enhanced through these experiences. For William, visiting a garden is

a means of meditation. Immersing himself in the beauty of a garden has a calming effect upon him allowing him to mentally escape. He described such an experience while visiting the Trial Gardens:

> *When walking through a garden, especially taking pictures and things like that, there's a certain serenity that comes over you. Because let's say that it sort of quiets the mindtalk as you focus in on observing the colors, and the textures, and the shapes of the flowers. You just as I think I said before, you just leave the outside world and enter into another world or another level you know of where what is happening in the outside world is just dispensed with, you just don't think about what is happening in the outside world, and what your normal mind chatter is, it just sort of disappears. You might say it could be placed into being a form of meditation, because you seem to have developed singleness or mindfulness as the buddhist would call it, in which your focus is just single pointed. Its very relaxing for me.*

A sense of escape is a benefit Claire receives from her gardening. Visiting other gardens enables her to mentally get-away. She shared her experience in visiting the Trial Gardens:

> *I just enjoy going over there [Trial Gardens] even as hot as it was this summer. I went over there one day by myself for about 45 minutes just to get away from what I was doing at home.*

Colleen also enjoys mentally 'getting away' when visiting a garden. The beauty and peacefulness of the setting enable her to have such experiences. She shared an experience she had in the Trial Gardens:

> *I just think the Gardens are pleasurable. I enjoy sitting on those benches and resting in a peaceful situation and just getting away from it all.*

The participants in the study enjoyed gardening for the mental escape they were able to experience. In addition to enhancing their well-being in this manner, gardening as a connection to other interests emerged as a theme in the human well-being category.

Gardening as a Connection to Other Interests

Gardening is conducive to integrating other interests and activities with the love of plants. Participants spoke about enjoying gardening because it was a link to other activities they enjoyed. For William, gardening combines his love for plants with his photography interests. Many times the main reason William visits a public garden is to capture a photograph of the perfect flower:

> *I guess since the time I started playing around with cameras, I've always been interested in taking flower pictures wherever I've been. Usually, as I walk through the Gardens I will only take pictures of what I consider a perfect flower. It may not be the perfect flower in other peoples' minds but it is in mine, you know.*

Two participants spoke about enjoying the benefit of physical exercise through their gardening. This attraction to gardening has just recently been considered in the literature. Taylor (1990) cites the physical value of gardening, reporting that 45 minutes of gardening burns the same amount of calories as 30 minutes of aerobics. Physical benefits of specific gardening activities include one hour of weeding burns 300 calories, and manual push-mowing of the lawn burns 500 calories per hour. Colleen enjoys gardening for the physical exercise and improved well-being it provides her:

> *I think when you have something physical rather than mental to do, that helps a lot and gardening can be very physical. Cause I know I don't get enough exercise and it's one way to get more exercise and when you take the mattock to the ground you release a lot of tension and frustration.*

Gardening provides a connection to nature. Participants spoke about a desire to interact with nature. Working with soil and plants fulfilled this need. When Colleen was a child she would help her father vegetable garden. She remembered disliking this type of gardening but enjoying the outdoors and working with the soil:

I really kind of disliked doing it [vegetable gardening] then but I enjoyed being outside and digging in the dirt.

Steven likewise enjoyed gardening for the outside activities it offered and the solitude he could spend in nature. He explained:

I like being alone you know, being out in the garden, being outdoors and that sort of thing. And I just, I guess I'm just fascinated by the way plants grow, what they do and what they can do and just enjoy the beauty of it. I like being out with nature.

Gardening can provide a connection to the past. Gardening is an activity that many are introduced to during their childhood; such as the participants in this study. One of the major reasons Maddie gardens is for the link it provides to pleasant experiences in her childhood. She keeps plants an active part of her life as a connection and reminder of her roots. For Maddie, gardening provides a connection to fond memories of her mother:

When I'm in my garden I'm my mom, I'm like with my mom again. And when she's dead and gone, where I will think of her most often will be in my garden. You know that's where it started. I could have silk flowers and artificial trees all over my house, but I don't, I have plants because they're beautiful in my house and they remind me of my connection that goes all the way back to the Pacific Northwest. That's my birthplace and that's where everything grows so beautiful.

Gardening can integrate the love of plants with the love of art. It can provide an outlet for artistic expression. As an artist has an outlet with the canvas so the gardener with the garden. Maddie had desires of being an artist since her childhood, but raising her family and work prevented the development of that interest. Gardening has linked her artistic interests with plants. She has discovered that gardening provides an artistic outlet for her:

My whole family is artistic, we all grew up drawing and painting and that was always my dream, to be an artist. However, you can't be an artist and have small children in your house. They would have it either all over the house, all over them or all over everything so I just did not know how to solve that problem so my solution was to forget that dream. And yet I'm finding that far beyond illustration and far beyond painting, the ability to create art with plant materials has a whole level that I never dreamt of and I think that's where the appeal is.

Gardening can integrate a passion for plants with an interest in earning income. The three professional horticulturists have found this notion to be true. Through the gardening goods and services they provide they have been able to earn a living through their gardening. One of the amateur participants discovered the satisfaction of selling what he produced from his cutflower garden. Jonathan explained:

Last year I started cutting and selling flowers from my garden. I sold them at the Gardener's Market. The only thing that really sold well was the Achillea. I'd never done anything like that before. I can tell people like to get something different or unusual from what you see everywhere.

Summary of Human Well-being Dimension

The third major finding of the study, then, was that gardening enhanced the human well-being of the participants. Three categories were identified which reflect the value of gardening to human well-being: 1) gardening and its beauty where gardening provides an outlet for creating beauty, 2) gardening and its emotions where gardening has an affective effect upon its participants providing emotional benefits, and 3) gardening as a connection to other interests where gardening integrates other interests with the love of plants.

Learning Experiences

> *A modest garden contains, for those who know how to look and to wait, more instruction than a library.*
>
> - Henri Frederic Amiel (1993)

Gardening naturally invites exploration. It invokes curiosity and opens the door to knowledge. To successfully garden, one must have knowledge and understanding of many different aspects of nature. As Alice Coats notes:

> *To work in the garden is to be brought into contact with the elements of botany, geography, ecology, genetics, chemistry and entomology - not to mention ornithology, bacteriology and meteorology - and interest may develop in any of these directions* (1993, p. 54).

Gardeners choose to learn about the different elements of gardening through a myriad of sources. This category represents the different resources and strategies participants used to further their gardening knowledge. Participants shared common threads in the gardening resources and strategies they used to extend their gardening knowledge. These include: 1) gardens, 2) books and magazines, 3) the Agriculture Extension Service, 4) plant societies, 5) volunteer work, 6) career, 7) veteran gardeners, and 8) the University of Tennessee Trial Gardens. Table 5 represents the learning resources and strategies participants used to further their gardening knowledge.

Gardens

A garden can teach much to the observant visitor. Since information is usually available with no implied direction, it requires self-directed learning. How a garden is experienced differs among individuals since each person brings their accumulated

knowledge and history to the perception of the environment. Visiting gardens was a way

Table 5. Gardening Resources and Strategies Used by Participants

Claire	- Work experience - Plant Societies - Visiting Gardens - Books and Magazines - The U.T. Trial Gardens - The Agriculture Extension Service
Colleen	- Volunteer work - Work experience - Plant Societies - Visiting Gardens - Books and Magazines - The U.T. Trial Gardens - The Agriculture Extension Service
Jonathan	- Volunteer work - Work experience - Plant Societies - Visiting Gardens - Books and Magazines - The U.T. Trial Gardens - The Agriculture Extension Service
Maddie	- Work experience - Visiting Gardens - Books and Magazines - The U.T. Trial Gardens - The Agriculture Extension Service
Steven	- Work experience - Veteran gardeners - Plant Societies - Visiting Gardens - Books and Magazines - The U.T. Trial Gardens - The Agriculture Extension Service
William	- Plant Societies - Visiting Gardens - Books and Magazines - The U.T. Trial Gardens

for participants to learn about gardening. Participants used gardens other than their own to be exposed to new plants, garden design and maintenance techniques. By observing and studying the aspects of different gardens, information was gained. Visiting gardens was a popular method of learning for participants but what each learned differed. Claire shared her desire to visit gardens:

> *Whenever we're traveling I always try to make sure that I visit all the gardens coming and going and the garden centers and things like that. I think it is really worth while in my education to see what's going on and to how they are displaying things.*

Steven spoke about learning from the "Southern School of Gardening" which to him meant visiting and paying attention to gardens in the Southeastern portion of the country. He tried to understand what made a garden successful as well as recognize what plant materials in such gardens survived the regional conditions and performed well. He explained:

> *The books don't typically give you that information [Southern plant performance] and I've learned that there's a wealth of knowledge out there that's not very well publicized or not that readily available unless you really dig deep and look about Southern gardens to learn what does well. Visiting gardens in Atlanta and throughout Georgia and South Carolina and North Carolina, the Piedmont area, and older gardens in east Tennessee that I had neglected, has given me a whole new perspective on what can be done rather than taking things that really don't belong here and adapting them. There are a lot of nice plants out there that will thrive and do well and meet the same purposes, do the same things than non-native plants which a lot of times cannot adapt to our climate. And I'm finding out that there's a school of gardening or whatever you want to call it specific to the Southeast which has influenced me a lot and, I think, made me a much better landscaper and a much better nurseryman.*

As an alternative to constructed gardens, mother nature provides a rich source of gardening information for the careful observer. Steven enjoys hiking and finds it offers

opportunities for learning more about gardening. Observing trees, shrubs and flowers which occur naturally in the wild gives Steven ideas about regional plant performance as well as combinations for designs:

> *Because I live in a rural area and because I like to hike a lot, I get a lot just from being out in the wild and just seeing what things do, taking the time to pay attention to what shrubs do this and what wildflowers do what and everything. I get a lot of ideas from going out in the woods and going out in nature and seeing, observing plant associations and seeing how things grow well together and feed off of each other in the wild.*

Books and Magazines

Another form of learning about gardening is reading gardening books and magazines. Reading was a meaningful way of learning about gardening for three participants. They spoke about spending a great deal of money and time on books and magazines. Claire shared how reading and garden books are a real obsession for her and a valuable learning resource:

> *I have a real obsession, I don't buy clothes you know like a lot of women, I buy books and plants. I have no restraint whatsoever when it comes to those. So I've got a pretty good little library and I do read and I don't think a day has ever gone by that I didn't read something in relation to horticulture.*

Steven spends a good deal of money each year on gardening reading material. Each year he subscribes to numerous magazines and buys current books. He indicated how important such resources are to him:

> *I just read a lot. I bet I spend, well I know I spend $500 to $750 a year on books and I subscribe to all the magazines and I just read a lot.*

Maddie likewise finds reading gardening material a meaningful way to learn. She loves to collect and read gardening books. She would rather buy books than use the library

to have them readily available for her use:

> *I'm a book person. I love books and I'm like a little squirrel in the fall gathering up books. I'd rather purchase books than use the library because when I buy it's always there to go back to. If it's loaned to me I don't feel I can leisurely look at it. I want to have time to go back to it if I want to.*

Two participants were frequent patrons of the local library for books and magazines. Jonathan has been successful in finding reading sources at the library which aid in his gardening education:

> *I go to the library and look to see what they have. I use to get Gardening magazine but I found I could read it at the library. I also read Organic Horticulture there.*

Colleen as well has found the library to meet her needs for garden resources:

> *I generally don't buy many books because I find most of what I am interested in at the library.*

Steven has found that books and magazines are a good source for the creative aspects of his job such as doing a landscape design. He has found that the pictures help give him ideas and be more creative than if he totally depended on his imagination:

> *As far as the creative part you know, like doing landscape design and stuff, I get things from a varied range of sources. A lot of it goes back to reading you know books and magazines and just seeing pictures.*

Through his work experience, Steven has learned not to trust everything he reads in books and magazines. Even though he finds them to be a good source of information, he has learned that information is not always accurate or in agreement with his experience:

> *I like to seek out specimens and see what their going to look like and then see whether the books are right and the books are very frequently wrong, and that's influenced me to be very careful and to learn more plants and*

learn more about them.

Volunteer Work

Two participants found volunteer work in public gardens to be a meaningful way of learning about gardening. Through their hands-on involvement and interactions with other gardeners, these participants were able to broaden their horticulture knowledge. Jonathan regularly volunteered to work in the Trial Gardens where he assisted the staff in many of the Garden activities. His volunteer work assisting in the planting and maintenance of the Gardens has been the main learning method which taught him about growing plants. His learning through volunteer work in the Gardens is best expressed in his own words:

> *This is where I've really learned about plants. It's difficult to put everything down on paper or on tape but it's been a tremendous learning experience.*

Through his volunteer activities Jonathan has been able to learn a variety of things to enhance his gardening. He had no difficulty recalling numerous things he learned from working in the Gardens. He has studied and compared the differences between the Trial Gardens and his garden and has determined that the soil conditions, use of mulch, and irrigation system make the Trial Gardens perform better than his. As a result, he has implemented many of the things he has learned from volunteering in the Gardens:

> *I found out that I had to work on my soil to make it better like the Gardens. I had to make compost and I put that in the soil now. And still they weren't as good and finally I figured out that you have an irrigation system you know those hoses buried in the soil and the only thing I have is a hose that sprinkles everything and some plants don't like to be sprinkled so that's much better. You mulch with different things. I never thought of mulching with pine needles. I always thought that most plants didn't like them, but you seem to do an awful lot with it. So, a neighbor had a pine tree that was leaning over my yard so I scraped the pine*

needles up and put it around part of my garden and they work along with the other mulch that I get. I mulch everything now.

Jonathan has assisted with the maintenance of the Trial Gardens through his volunteer efforts and as a result was able to broaden his knowledge.

I've learned about the care that goes into developing these plants from seed into plants that are beautiful in the Garden. The transplanting, the care that they receive, all of these things have been very important to me. Things I did not know before. The care and the fact that so many plants have to be deadheaded. I've always known about marigolds and petunias but other plants, it's amazing you cut back the flowers and next thing you know you've got more flowers coming out. Roses are this way, almost everything is.

Volunteering in the Gardens has exposed Jonathan to plants he has never previously grown. He explained in detail the plants he now grows and was especially enthused about cooking with herbs:

As a result of being involved with the Gardens here I now grow perennials and herbs. I was very traditional. I loved flowers but I never did any great experimenting and now I have all kinds of different things. Like I have a small herb garden but I have basil planted around in each garden spot that I have and different other things. Lemon grass is mixed in with other plants. And I'm learning how to cook with them.

Volunteer work in the Trial Gardens was also a meaningful way for Colleen to advance her gardening education. She assisted with transplanting seedlings in the greenhouses and then into the Garden. Through her hands-on experience she explained what she learned:

It was a real good learning experience. I know I learned about the soil that you mix and how to make the little holes and they are so tiny [the seedlings] you just wonder if they'll ever survive and they do, it's amazing. I learned how you transplant them and it was incredible to watch them grow week after week till finally they were ready for us to plant outside.

Plant Societies

Though all participants in the study were members of plant societies and enjoyed the social interaction they afforded, three found them to be an effective means of expanding their gardening education. By networking with members and attending the societies' educational events, participants felt they were able to learn the latest gardening information. Claire belongs to eleven plant societies and feels they are a valuable learning resource.

> *Plant societies are where you learn about new plants. I don't want to grow something that has been around forever, I like to try new things and I'm always learning what is new through the societies I'm in. It's a good way for me to stay current.*

Colleen, likewise, has found her involvement in plant societies to be a way for her to continue her gardening education. The current information she feels she is exposed to is what she values most:

> *I just feel it is a good way [plant societies] to always be learning something new about herbs which you know I'm just really into.*

For the new and progressive information, Steven attends the annual conference of the Native Plant Society:

> *At the Native Plant Conference, I go there faithfully every year because it is things that are new and progressive and exciting and they're at all levels where everybody can learn something.*

The Agriculture Extension Service

Whether through a personal conversation or printed educational information from the county agent, some participants found the Agriculture Extension Service to be a useful source of gardening information. Steven has found the Service to be a useful

resource for information:

> *I know very little about that [insects and diseases], and there's so much to know that I can use my time more wisely rather than trying to guess or spend hours going through a book and then make a bad decision about what it might be. You know I can run right up here [the Entomology and Plant Pathology Extension Lab] in 5 minutes or just mail it or have the customer bring it up here and find out exactly what it is, so I use that a lot. In spring and summer I probably come up here once a week.*

Maddie has found her Extension county agent to be helpful with gardening information around her home:

> *I've used my county agent. I relied on Joe Rogers to tell me how to run everything. Anything I wanted to do from strawberries to anything to the yard, turf, everything.*

Three of the participants had taken part in the Extension Service's Master Gardener program to extend their gardening education. All of them found their experience to be rewarding. All felt the training program has been the backbone of their gardening education. Jonathan describes his experience with the Master Gardener program:

> *I went through the Master Gardener program and oh that was fantastic. We had professors from the university that would explain in detail about many, many things. You were there [researcher], Missy was there and so much valuable information was presented. That class was the springboard for me and gardening and it was reinforced by working in the Trial Gardens and in the university greenhouses.*

Colleen attended the Master Gardener program as well, and has valued her educational experience so much that she has stayed involved by attending their monthly meetings:

> *The Master Gardener program really taught me about gardening. That's why I have stayed involved with them because of the good information always available.*

Veteran Gardeners

Talking with veteran gardeners was a valuable learning resource for one participant. Sharing gardening experiences and information with such gardeners was a significant way for Steven to learn. Because of their seasoned experience, Steven valued them as a source above and beyond books and professionals. Through his work as a professional horticulturist he would seek out such gardeners to see what he could learn:

> *You know there's a lot of little old ladies that have gardened for forty years and you know there's a lot of knowledge to be had from them. Probably more from books and probably more from professors, just because they've actually done it day in day out for years.*

Work Experience

Experience was a good teacher. One participant noted his work experience as a valuable learning resource. As a professional horticulturist, Steven constantly was exposed to mistakes he observed made by others. He has made a point to learn from the errors he observed:

> *Working day-in and day-out doing landscape renovations where you see everything that was done wrong, that has influenced me strongly to find out more about how the plants grow and like what their going to look like 20 years down the road.*

The University of Tennessee Trial Gardens

A public garden can be a valuable gardening resource. Use of the University of Tennessee Trial Gardens was a popular and significant learning resource for these participants. Participants shared common interests in what gardening information they learned from the Gardens. Themes which emerged regarding the use of the Trial Gardens as a learning resource were related to plant study, garden design, and garden

maintenance. Table 6 represents the information participants were interested in learning from the Trial Gardens. Participants approached learning in the Gardens through a

Table 6. Type of Information Learned From the Trial Gardens

Claire	Plant Study - discover plants - use Garden literature - determine plant preferences - determine plant performance Garden Design - visualize ideas - observe design elements Garden Maintenance - study garden aesthetics - study transplanting practices
Colleen	Plant Study - discover plants - use Garden literature - learn botanical names - determine plant preferences - determine plant performance Garden Design - visualize ideas - observe plant use - observe design elements - determine flower color preference
Jonathan	Plant Study - discover plants - plant identification - determine plant preferences - determine plant performance - compare own garden performance to Trial Gardens Garden Design - visualize ideas - observe plant use - observe design elements Garden Maintenance - study garden aesthetics - study transplanting practices

Table 6. Type of Information Learned From the Trial Gardens (cont.)

Maddie	Plant Study - discover plants - learn plant sources - plant identification - use Garden literature - learn botanical names - determine plant preferences - determine plant performance - compare own garden performance to Trial Gardens Garden Design - visualize ideas - observe plant use - observe design elements Garden Maintenance - study garden aesthetics - observe soil preparation
Steven	Plant Study - discover plants - learn plant sources - plant identification - use Garden literature - learn botanical names - determine plant preferences - determine plant performance - compare own garden performance to Trial Gardens - determine plants which thrive is Southern gardens
William	Plant Study - discover plants - use Garden literature - determine plant preferences - determine plant performance Garden Design - visualize ideas - observe design elements Garden Maintenance - study garden aesthetics - study labor requirements

variety of methods. Throughout their interviews participants made reference to learning

by means of observing, visualizing, touching and feeling, comparing and drawing from experience.

Plant study

Participants were interested in learning specific information about plants. Compared to the other two themes of discovering plants and garden maintenance, this theme contained the greatest variety of topics and interests for participants' learning. Interests in plants which participants shared included: discovering plants, learning plant identification, determining plant preferences, determining plant performance, comparing their own garden performance to Trial Gardens, learning botanical names and determining plant sources.

Discovering plants. The most popular aspect of the Trial Gardens was discovering new plants. All participants spoke about using the Trial Gardens for such information. The purpose of the Gardens was to test and evaluate plant materials new to the market. Seeking such information from the Gardens was evidence that participants clearly understood the focus of the Gardens. Claire enjoyed growing different and unusual plants as well as those considered experimental that would not be available to amateur gardeners. She valued the Trial Gardens as a resource for such information:

> *I don't want to grow something that has been grown for a million years you know. I like to try different things, and that's why the Garden is so good because there are new things over there.*

Colleen is also interested in discovering plants. She enjoyed learning plants new to her and then trying them in her garden. She has found the Trial Gardens to be a good source for such information:

I really like the Gardens cause you see things, new varieties that you know if you go to a nursery you might not necessarily see. You see them before they come out on the market here for one thing. So if you're interested in that you maybe next year can ask for it at the garden center or nursery.

Discovering plants in the Gardens has been a learning experience for Jonathan. Through his visits and volunteer work he has learned about new plants. As a result he has expanded his gardens to grow these new discoveries:

I've found so many things that I've never even heard of before in the Gardens, like Salvia. The only Salvia I knew of then was the tall spiked red one, it was an annual, and I've just seen things that will grow in Tennessee and things that will grow longer that are perennials. It's made me branch out. I started out with one garden area in my yard and now I think I have six.

Maddie has found the Gardens to be useful for discovering and learning plants. She is interested in discovering plants which are new to her and would be different for her to try in her garden:

You've always got something different in there. When I go visit the Gardens, what I look for is something different. I mean that's what you look for is ideas for your landscape. In my particular situation I look for an introduction to new plant materials, ideas for my own landscape, especially physical plantings, and the plants themselves.

Maddie is focused on broadening her knowledge of perennials. She has made a point to learn the different species within a genus and has found the Trial Gardens to be a valuable resource in learning such information. She explained her use of the Gardens in discovering and learning perennials:

When it comes to the perennials, I'm still trying to educate myself what is what. So, if you didn't have any of those little name tags out there I probably wouldn't be as interested in going to that garden. Because part of it is I want to teach myself what a Lobelia looks like and what another particular genus might look like. And then lots of times you have more than one. In other words not just one Lobelia, but you might have 3 or

4 species in one genus and that's an educational experience to me. I say well gee I didn't think that was a Lobelia, and it is, it may be only 6 inches tall but it is a Lobelia. So its definitely educational for me cause I know so very few of them.

Steven's main focus in visiting the Gardens has been for discovering plants. For his own personal interest as well as professional development, he wants to stay current with plants which are new to the market. Steven has been able to satisfy this interest through his Garden visits:

I've really used it to see if there was anything new that struck me that I thought was really interesting. You know and to see how well they were doing or if there was something that was new I thought you might have down there that I'd seen in the catalog or somebody told me about to see if it was doing well.

William too has used the Gardens to discover plants. He has an interesting method of learning plants new to him in the Gardens. His camera and plant photographs have been his learning tools. By studying the photographs and names of the plants he takes in the Gardens, William has been able to discover plants new to him and learn their names. He explained:

I label my photographs, I have a log book. I am maintaining a little log book so that when I put together slides now I have them identified. I've learned the names of a lot of plants this way.

Plant identification. Within the theme of plant study, some participants were interested in using the Gardens to identify plants they had grown or were familiar with but did not know their name. Jonathan has used the Gardens for learning such information:

I had several things that I didn't know the name of and I came down and checked and found out what they were. This has been a big help.

Maddie also has found the Gardens useful for plant identification:

> *I am forever learning what it was I grew last year and loved so much because you'll have it in the Garden. A lot of times I'll go buy something and I will lose the tag or the cats will drag it or something happens to it and I'll learn the identity of a plant that I grew that I really liked and an example of that is I think you had a little orange zinnia, it was single petaled, beautiful and I never would have guessed what it's identity was without your plant list.*

Plant preference. Within the theme of plant study, participants spoke about using the Gardens to determine their plant preferences. Participants were able to determine what plants they liked and would prefer to have in their gardens by observing and studying characteristics and performance of Trial Garden plants. Through her visits, Claire has been able to determine what plants she would like for her garden as well as ones she would like to recommend to others:

> *Oh I use the Gardens to figure out what I want to plant in my garden and what to recommend for other people. I get lots of ideas of things I want to try in my garden.*

Claire was able to remember plants she was intrigued with in the Gardens by marking her favorites in the Garden literature available free in the Gardens. She hoped to establish a cutflower garden around her home and planned to use the plants she highlighted as her favorites in the literature in the garden:

> *But as I say, there were a number of plants that I've got marked on my little sheet [Trial Garden literature] in the house, that I'm interested in trying. My garden here, I'm going to make a cutting garden out there in the holding bed, my holding bed, and then I want to do more annuals for cutting. And I'll be using the booklet I've marked to help me select what I will actually grow.*

William likewise has been able to determine what plants he would prefer to have in his garden through his visits:

If I ever get back to creating my own garden, I'll know which ones do the best in this area and also which ones I would like to see in my garden.

Maddie uses the Trial Gardens' literature to record which plants she was intrigued with during her visit and would prefer to have in her garden. As she walks through the Gardens and observes the different plants, she highlights in the literature the ones she would like to have:

I've learned when I go out in the Trial Gardens I always get the literature because I always circle about 10 plants minimal and those 10 plants I want to use in my garden.

Colleen has been able to learn what plants she really likes and desires to add to her garden:

I get ideas as to what I'd like to have in my yard and I have bought quite a few things that I've seen in bloom here that I like real well.

Steven not only has used the Gardens to determine his plant preferences but his customers' preferences as well. The Gardens have been a valuable tool in Steven's professional garden design work with his clients. By sending his clients to the Gardens to determine which plants they would like to have in their garden, Steven can better design a garden to suit their preferences. He explains:

I send clients to the Gardens all the time. I tell them they can help me do a design for them by going down there and picking things they like. I can design and pick what looks attractive to me, but some of the colors may be just totally unacceptable to them or particular styles or shapes or sizes or whatever. They can go down there and pick and it's a good way of dealing with the public that's very uneducated as to any plants, frequently, and that's a wonderful resource. I could show them pictures in books all day long but it's not the same as them having a place to go and see for themselves, and that's really probably even a more valuable use of the Trial Gardens to me.

Plant performance. Participants had interest in studying plant performance in

the Gardens. They were interested in learning which plants were outstanding for Southern gardens. By observing, comparing and evaluating the appearance and overall characteristics of plants in the Gardens, participants were able to learn which plants were suitable for Southern gardens. Claire recently moved from the north to the South and is very interested in learning what plants are suited for Southern gardens. She has used the Trial Gardens to obtain such information:

> *Being new to the area, we've been here two years now, and I'm having to find out a lot of things that are hardy and can tolerate the heat and get enough cold treatment. I'm really having to study this and the Gardens have afforded me a very good opportunity to see what can grow.*

Colleen has interest in learning plant performance as well. She visits the Gardens regularly but will purposely visit during various seasons to compare differences. She explained:

> *I like to come say, once in spring and once in the summer and then in the fall just to see how different things look at different times. So I try to come at least three times just to walk down through them real good and really look at things and see how things are doing.*

Jonathan has used the Gardens to determine what plants would be good performers in his garden. Through his volunteer work Jonathan has been able to observe and study the performance of plants in the Gardens. As a result he has added many new plants to his garden that he never knew would grow in the Southern region of the country:

> *As a result of being involved with the Gardens I've got ideas of new things that I didn't know before that would grow here. I have never been aware of so many different kinds of plants.*

Maddie has used the Trial Gardens to learn what plants would most likely thrive and perform well in her garden. She has taken notice not only of plants which do well in the

Garden but those that do not. She records this information for her use:

> *I've studied what thrives under what kind of conditions in a mixed garden like that. Some of the plant materials that don't make it, that don't look good in your gardens discourage me from buying it for my garden. But you can definitely tell the ones out there that are struggling and the ones that are happy campers. So that's another area of information that I get, is what's doing good and what isn't. I take your little guide with me and I write the notes next to the name of the plant so I can remember what does well.*

In visiting gardens and nurseries, Steven's main learning interests have been regional plant performance over time. The Trial Gardens as well, have afforded him the opportunity to study this information:

> *You know when I read a magazine or something that's talking about a plant that's on a national perspective, I read something in Horticulture magazine that somebody might have written about a particular plant and their experiences in Seattle or Austin or something then that might not be pertinent to Knoxville, Tennessee cause the soil types are different and everything. And that's what I'm wanting to find out when visiting the Gardens, is whether it thrives and whether it's going to be a good all around plant for this area of the country.*

Learning botanical names. Part of Maddie's gardening education has included learning plant botanical names. As a professional it is important to her to learn the scientific names for many plants. She feels such information will assist her in locating plants she wants to find for her garden plus make her more knowledgeable in conversing with other professionals. Maddie has found the Trial Gardens to be a valuable resource in learning botanical names. Through the use of the Garden literature which contains a plant key with both common and botanical names of plants in the Gardens, Maddie has been able to expand her knowledge in this area:

> *I like being able to learn the botanical name of the plants in the Gardens. If I know just the name, the latin botanical name, then I know that I can*

find that plant somewhere, through the catalogs or through the retail places, but if you just go and see something like the display gardens in front of the customs area coming out of Canada, if you see something there that you like you may or may not see it again sometime in your lifetime.

Learning plant sources. Several participants spoke about the importance of being able to find plants in the Trial Gardens for their gardens. Learning the different sources of the plant materials in the Gardens was meaningful to Maddie:

> *It means a lot to me that you provide the source of your plant material in the Gardens. If I want to get that plant I now know which seed company or nursery to contact. I don't want to hunt all over the world for a plant I saw in the Gardens. So the source, the name of the plant material and how its thriving in Tennessee, those are the things that impress me and I've learned from the Gardens.*

Colleen uses the Trial Garden's literature to enhance her knowledge on plant botanical names as well as the source of the plant. She explained how she uses the Trial Garden literature to aid her with such information:

> *I read the list [Garden literature], in fact I did that the other day, because I cannot remember. You know there is so much down there that if you left and didn't write it down or check it off or something I'd never remember which variety or which species. Its real helpful when I go to buy something and need to know the botanical name as well as the source from where you got it.*

Use of garden literature. Use of the Garden literature in learning and studying plants in the Trial Gardens was mentioned by several participants. Claire has found the Garden literature to be helpful in her learning listed plant names as well as a way to record her comments:

> *I think the best thing about the whole Garden is the fact that you've got those sheets, that you know tell what the plants are. You can't label all that stuff, so the numbering system is by far the best way to go. And I use it to make notes of my favorites and even the plants I don't like very well.*

Maddie has also used the Garden literature in her learning. She has used it to identify plants as well as learn their botanical names. She also records in the literature her impressions and comments about plants she sees in the Gardens to use in her gardening at a later time:

> *I use the Garden literature to circle plant names and to say I want this one. Comments like that or this is one that I have in my garden and I didn't know what it was.*

Steven uses the Trial Garden's literature to aid in his learning. He identifies in the literature the new plants he discovers so he can recall them at a later time and study more about them. He also identifies the plants which really impress him as performing extremely well and would be good to use in his gardening practices. Such information is valuable to him both in his own gardening as well as his professional work. He explained:

> *I've visited several times just to see what was there and got the list out of the mailbox and gone through number by number just to see if there was anything new that struck me that I thought was really interesting. Last year I took a list you know and made notes on my list as I went down through there.*

Colleen makes use of the Garden literature as well in her gardening. She, like several of the other participants, will use the literature to record comments and remarks about the plants to use at a later time. She records what plants she prefers in the Gardens and would like to add to her garden:

> *I like to get the list when I go through and check off what really does strike me that I'd maybe like to try sometime.*

Comparison of gardens. Jonathan has used the Trial Gardens in a unique way to study plants. He has used the Gardens as a standard by which to measure his own

garden performance. By comparing plants in his garden to the same plants in the Trial Gardens, Jonathan can determine how well his garden is performing. He explained:

> *I've been trying to grow lavender and I had to come down here to see how well yours was growing compared to what I had. I think I had killed about three plants before I got one going, and I check the other things too that I have that you have in the Gardens. The Gardens always give me an idea how I'm doing with my plants at home.*

Garden design

Design is an integral component of a garden. It consist of the decorative arrangements of plants in such a fashion to give shape and form to a garden. To professional horticulturists, garden design is an art form and requires skill and expertise. Not everyone has the ability to design a garden. Study of garden design can be a worthwhile endeavor. This theme represents specific information participants desired to learn about garden design. Interests in garden design include: observing plant use, observing design elements, visualizing ideas for their garden, and determining flower color preference.

Plant use. How plants are used in a garden, meaning how they are arranged, placed and integrated together effects the overall garden design. This aspect of garden design was a learning interest in the Trial Gardens of all participants but one. Steven used other resources than the Gardens for such information. Jonathan has used the Gardens to study plant use and its impact on garden design. He regularly has taken ideas for color combinations and plant mixtures from the Gardens. As he stated: "If it looks nice down in the Gardens, I'll give it a try." He has implemented several ideas he took from observing the use of plants in the Gardens. He explained:

I've always just done the basic thing when I've gardened, you go to the store and buy a six pack of petunias and a six pack of marigolds or whatever and put them out and that was it. Now I've learned to mix, to put things together and what looks nice. Having this Garden nearby so that I can come and look at it has been a big help in learning what to do with plants.

The Trial Gardens are where Jonathan developed a passion for herbs and discovered their beauty and use in the landscape. Observing their beauty and their integration with different types of plants in the Gardens initiated Jonathan to do the same in his own gardens. In his gardens at home as well as the one he maintains for the city, he has integrated herbs with other flowering plants. He appreciates learning about the use of herbs and how to integrate them with other types of plants:

One of the things that impressed me were the different varieties of herbs. Basil for examples, how many varieties are there, hundreds I guess. And they do so beautifully in the garden, there are so many different uses of them in the garden. They're a beautiful hedge, a beautiful border, and you walk past them and they just smell so beautiful. I would never have thought to use them in so many different ways.

Maddie also has used the Gardens to get ideas on plant use. She has studied the integration of different plant materials and would like to do the same in her landscape sometime:

The Gardens are marvelously integrated and that in itself is a learning experience. Without even looking at the identity of anything, it's just the aesthetics of that garden are really incredible. I have got ideas on how to use plants together and how they should be placed in a garden. I haven't implemented anything cause I haven't had any time to implement it. But if I implemented anything, I'd implement the mixture of the woodies and the perennials like in the Garden cause I think that's not what you want in your landscape, you want a mix.

Claire also has used the Trial Gardens to study garden plant use. She values the layout of the Gardens for the landscaped effect it has and the ideas it offers her in planning her

garden:

> *The thing that I like about the Garden is it looks like a beautiful landscape. It's not like an arboretum where you go in and you see rows and rows and rows, it has a landscape effect to it, which is very nice. You can get ideas for design and how to use plants in your garden.*

The Trial Gardens have been a learning resource for Colleen in studying garden plant use. She has paid attention to the use of shrubs throughout the Garden and how they can be used in combination with one another:

> *I think the landscaping with the shrubbery is real nice. I have got some ideas as to how to do things and use things in my landscape.*

Visualize ideas. A garden can be a place to acquire ideas. One can personalize an idea by visualizing it in their world. Several participants spoke about seeing garden design ideas in the Trial Gardens and visualizing them in their garden. Claire, who had not been able to grow hollies because of living in Ohio which has too cold a climate, was excited about being able to grow them in her Southern garden. She spoke about visualizing a holly she discovered in the Gardens growing in her new Southern garden:

> *Hollies were something that I was not able to grow. There's a beautiful one over there [the Trial Gardens], it's on the left-hand side as you go down and I haven't looked that up [the specific growth requirements] but I just really decided it was a good one for me to grow and I can just see it in this one spot of my garden.*

Maddie has visited the Gardens and visualized ideas she has seen there in her own garden. She imagines in her mind how she would like her garden to be:

> *I've gotten some ideas about how I would do a spot here or a spot there, when I do some of that design work in my own landscape. How I would change this and change that so that it could be like an arboretum that has lots of plant materials, like the Trial Gardens.*

Observe design elements. Different elements contribute to the overall design and

look of a garden. Elements such as ground contours, groundcovers, mulch, and curved versus straight lines of landscaped areas help compose and define the garden design. Participants noticed various design elements during their Garden visits. Colleen paid attention to contrasting ground contours, outlines of beds and contrasting groundcovers:

> *I like the way that the entrance to the Gardens is done and the shrubbery is done, and the way they kind of made little islands in the middle. I like how some of the area is low and then there is the mounded area. Course you have the squared beds, I would never have beds that big in my yard, but it all looks real good and has given me some ideas for design in my own yard.*

Maddie also noticed different design elements during her visits to the Trial Gardens. She observed the contrasting contours of the Garden:

> *Berming is an exciting part of the landscape that isn't that difficult to do. And we can do it, it's a lot easier than a water garden, just to berm the earth and create space, divide space with berms, and then it shows businesses and municipal leaders how you can create a tremendous impact with a small amount of space. Cause that berm is not that big, anybody could do that. So I think that that's an educational point for everybody in the community, but especially me cause it keeps reminding me that I don't have to live with that flat cow pasture that I have my house on either. That I can use berms to create different feelings of space.*

Garden maintenance. Garden maintenance is an important dimension of a garden. It includes the grooming and care of plants and the garden grounds and effects the overall aesthetics and appearance of a garden. Typical garden maintenance activities include mowing, mulching, pruning, watering, fertilizing and weeding. This theme represents information participants were interested in learning which pertained to garden maintenance. Interests in garden maintenance which participants shared include: garden aesthetics, transplanting practices, labor requirements, and soil preparation.

Garden aesthetics. The neatness and cleanliness of a garden comprise its

aesthetics. Several participants paid attention to this aspect of the Trial Gardens during their visits. Claire appreciates a garden that appears to be well tended, especially in the peak of the growing season when temperatures are extremely warm. She expressed her value in seeing a garden watered and weeded:

> *It was a very warm afternoon and it was evident that things had been watered. I'm real impressed with the fact that the things are taken care of and you do see the plants growing under normal conditions but their being tended to. What I'm saying is you know, even though it's hot, their being taken care of. Things were weeded well too and everything just looked real good.*

Transplanting practices. In studying the maintenance of the Trial Gardens, Claire noticed that several trees and shrubs were planted too closely and was curious to how the Garden personnel was going to deal with the situation. If the plants are transplanted to different locations she is anxious to study their survival and determine if it would be a good practice for her garden where she has a similar situation. She described her observations in the Gardens:

> *I'm learning that over the three years that I've visited you know and seen things over there I've noticed some of them look like their going to have to be removed maybe. And that's something that I tend to do, move my garden around and I think oh that looks great there now we'll move it later. But some of the things you can't move they're such vigorous growers. So I'm anxious to see if you move those things are you going keep them in the area, are they going to transplant well or do you really need to put things in it's ultimate place forever?*

Labor requirements. William has paid attention to the level of maintenance being done in the Gardens. Through his study of the Garden's maintenance, he has determined that one can have a showy garden like the Trial Gardens with minimum care. He has made such a conclusion based upon never seeing any labor being expended in the

Gardens during his visits and he feels the Gardens always look neat. He explained:

> *I've noticed, I've felt like that these Gardens out here sort of represent minimum care facilities. They're minimum care gardens, and that really you don't really have to spend that much time in your garden to have a show piece. Which I don't believe that you spend as much time on these gardens as homeowners would spend on their own gardens, yet they are spectacular. Considering that I have visited them enough times, I've never found anybody working out there.*

Soil preparation. Maddie, who was able to drive by the Trial Gardens everyday on her way to work mentioned maintenance of Gardens. She paid attention to the soil preparation which was done in the Gardens. She has determined that it takes a lot of work in adding compost and fertilizer to a garden to have good soil:

> *I watch how you all prepare the soil for the Gardens. I know that each year you till the Garden and then you fumigate. I can't fumigate but I know how important it is to till your garden. I've seen you add compost to the soil and fertilizer and then till it in and I know that you have beautiful soil in the Gardens. The kind I hope to have in my garden. I know it takes a lot of work to get it like that though.*

Summary of Learning Resources and Strategies

The fourth finding of the study, then, was that participants have a variety of learning experiences through their gardening. These experiences are through the use of a multitude of resources and strategies. These resources included visiting gardens, reading books and magazines, using The Agriculture Extension Service, plant association involvement, volunteer work, work experience, talking with veteran gardeners, and the University of Tennessee Trial Gardens. A public garden such as the University of Tennessee Trial Gardens offered learning in the areas of plant study, garden design, and garden maintenance.

Chapter Summary

Participants in this study were serious, deeply involved gardeners. The gardeners' portrayal of self consisted of four dimensions which included social connections, emotional well-being, personal history, and academic resources. In their social connection dimension, participants used their gardening activities for meaningful social interactions with other gardeners, family and friends. Gardening activities enabled participants to find meaningful social interactions in volunteer work in a public garden, memberships in plant associations, visiting a public garden, and a career as a professional horticulturist. Through their gardening, participants were able to enhance their human well-being dimension. Activities shared by participants which were of benefit to their emotional and physical well-being included visiting a public garden, physically working in a garden, designing a garden, and growing plants with success. The personal history dimension of participants accounted for their gardening past and how it influenced and shaped their gardening experiences. Positive gardening experiences during childhood sustained participants gardening interests into adulthood where continued gardening education and activities were an integral part of their lives. In their learning experiences dimension, participants used their gardening activities to expand their gardening knowledge and education. Reading gardening material, involvement with plant associations, visiting gardens, volunteer work, work experience, and using The Agriculture Extension Service were different resources and strategies participants used to expand their gardening knowledge and skill.

A conceptual model of an avid gardener's world was presented and suggests how

one thinks and acts as an avid gardener. The model is grounded in a dynamic relationship between an individual's environmental, psychological, and cultural contexts and the actions and beliefs in the four dimensions of their gardening world. The model reflects past and present life experiences, values, and other internal forces within the individual. In addition, the model reflects the external forces in an individual's life being the societal/cultural resources, beliefs, and values and social relationships, physical surroundings, and situations. The model represents the dynamic nature of a gardener's make-up and the major dimensions in their lives which influence their gardening.

This study looked at the experiences of adults who visit a public garden. The environmental, psychological, and cultural context of an avid gardener's world and each of the four dimensions of a gardeners construction influenced how participants experienced a public garden. A public garden was a place for participants to experience each of the four dimensions of their make-up (see Figure 2). Participants used a public garden to socially interact with others, enhance their human well-being, strengthen their gardening background, and extend their gardening knowledge and education.

Figure 2. Visitors experiencing a Public Garden



CHAPTER 6

OVERVIEW, SUMMARY OF FINDINGS, CONCLUSIONS, AND IMPLICATIONS

Overview

The purpose of this qualitative study was to understand the experiences of adult visitors to a public garden. The public garden used in the study was The University of Tennessee Trial Gardens. Three selection criteria were used to select participants which included 1) each had visited the Trial Gardens at least three times the year before the study, 2) all participants were considered avid gardeners, and 3) all participants were members of Friends of the Gardens. Two of the criteria for the selection process will be explained elaborating upon the Friends of The Gardens and the meaning of an avid gardener. The researcher identified a pool of potential interviewees who appeared to meet these characteristics. Through contacts with these individuals, three men and three women volunteered to participate in the study. For purposes of this study, an avid gardener was an individual who gardened regularly, visited different gardens, regularly read garden literature and was associated with various gardening organizations. Friends of The Gardens is a support group which exists to advance and promote the purpose of the Trial Gardens and to heighten its awareness among the public. Membership benefits include educational workshops, seminars, plant sales, and Garden lectures and guided tours by Trial Garden staff. Members contribute to the Trial Gardens by assisting in

providing guided tours of the Trial Gardens as well as volunteering in the Garden's planting and maintenance. Members assist with the transplanting of the Garden's seedlings in the university greenhouses and then planting them in the Garden when they are mature. Participation of members in various maintenance activities in the Gardens such as weeding, dividing perennials, and pruning also contributes to their success.

Two key research questions guided this study which were:

1. How do adults experience and make meaning of a public garden?
2. How do adult decribe thier gardening involvement and how do they perceive their visit to a public garden to influence their gardening practices?

Portraits of each participant were developed which characterized th unique construction of beliefs and actions with the public Trial Garden and their gardening practices. Inductive analysis of the avid gardener's interview transcripts delineated a framework of an avid gardener's world.

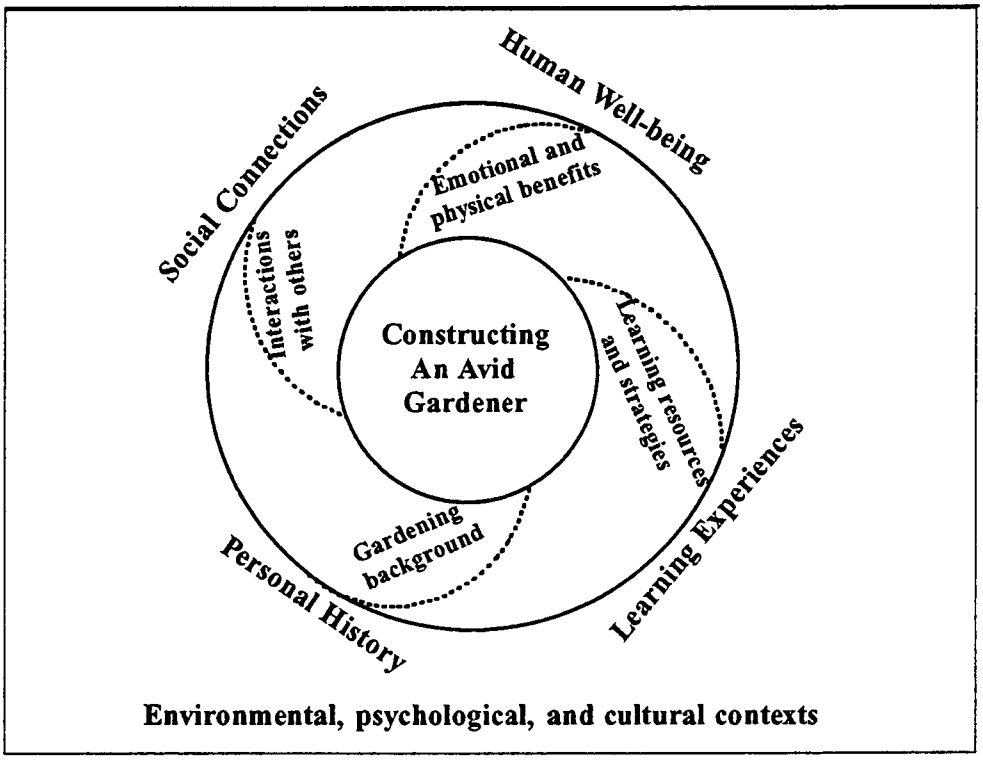
A conceptual model of an avid gardener's world is composed of: personal history, social connections, human well-being, and learning experiences. Key categories and themes within each of these dimensions comprise the personal constructs of the avid gardener. Personal constructs, according to Candy (1991), provide the framework through which, and into which, all new learning is appropriated. It is through these personal constructs of these four dimensions that avid gardeners experience their plant world. From this research a conceptual model of an avid gardener's world has been delineated. This model reflects two major components. The first component reflects the environmental, psychological, and cultural contexts of a gardener's world. The second

component reflects the dimensions of an avid gardener's world which represents their gardening experiences, practices, and education. The dimensions of an avid gardener through which they experience their gardening include: 1) social connections, 2) human well-being, 3) personal history, and 4) learning experiences. Figure 3 presents the conceptual model of an avid gardener's world and suggests how one thinks and acts as an avid gardener. The model is grounded in a dynamic relationship between an individuals environmental, psychological, and cultural contexts and the actions and beliefs in the four dimensions of their gardening world. The model reflects past and present life experiences, values, and other internal forces within the individual. In addition, the model reflects the external forces in an individuals life being the societal/cultural resources, beliefs, and values and social relationships, physical surroundings, and situations. The model represents the dynamic nature of a gardener's make-up and the major dimensions in their lives which influence their gardening. This conceptual model of an avid gardener's world is presented and discussed in greater detail in chapter 5.

Summary of Findings

This qualitative study interviewed avid gardeners who had visited the University of Tennessee Trial Gardens, a free, public garden, and asked them to reflect upon their experiences. From an inductive analysis of the interview data, four dimensions emerged which this study argues represent the personal constructs through which adults experience

Figure 3. A Conceptual Model of a Gardener's World (II)



and make meaning of a public garden and of their gardening world. The dimensions of an avid gardener include: 1) personal history, 2) social connections, 3) human well-being, and 4) learning experiences. Several categories emerged within each of the four dimensions of an avid gardener. This section summarizes the findings and presents conclusions and implications of this study related to the four dimensions.

Findings Related to Personal History

The first dimension of how gardeners made meaning of their gardening world and a public garden focused on their personal history. This dimension reflects that

participant's past experiences and meanings, from early childhood gardening through their continued personal involvement in gardening, construct what they value and how they act in the gardening world. This dimension has influence on how individuals evolve as a gardener.

Three categories emerged within the personal history dimension which related to participants' gardening background. The first was the participants' "introduction to gardening." All participants were introduced to gardening during their childhood by their parents except for one who grew up in an orphanage. Participants recalled fond memories of their introduction to gardening and acknowledged it as influencing their decision to garden as an adult. This finding is similar to a study of independent learners by Brookfield (1984). He found that key individuals, particularly parents, were instrumental in awakening the learning interests of his study participants. In this study of avid gardeners, one participant felt she became a professional horticulturist because of her positive childhood gardening experiences. Maddie's words best summarize this category: "I enjoy gardening because it takes me back to my roots, to a very pleasant place and time in my life." This finding is consistent with research just recently introduced in the horticulture literature. A study by Clark and Manzo (1988) involving community gardeners indicated that people who participate in gardening had positive, previous experiences. Data from this study supports this notion and provides perspectives from a different context. It clearly shows that gardening background and past gardening experiences influence the way gardeners experience their gardening world and a public garden. This information indicates that gardening education and gardening

experiences can influence the role gardening will play in an individual's life. It suggests that the number of individuals who choose to garden throughout their adult journey can be influenced by the gardening education and experiences they receive early in their life. This study found that the personal constructs a person holds about gardening are influenced and shaped by significant people during their childhood, such as parents. If parents are gardeners, children will most likely grow-up to garden as adults.

The second category within the personal history dimension was "key life role and learning role in gardening." The avid gardener participants in this study had acquired some formal gardening education. Three had taken horticulture education in college and three had participated in the Agriculture Extension Service Master Gardener Program (described in Chapter 5). As participants reflected upon their gardening experiences they expressed an interest in continuing their gardening education to improve their gardening success. Memberships in more than one plant society was a shared component of participants' learning role in gardening. Participants belonged to plant societies for the social connections and continuing education they provided. Another aspect participants shared was the degree which gardening dominated their lives. Gardening for these participants was a serious, prominent activity in their lives. Participants daily engaged in some form of gardening such as reading a garden book or magazine, weeding, visiting a garden, or attending a plant association meeting. Claire's words best summarize this category: "I know a day doesn't go by where I don't read something or at least think about my garden and what I want to do next." This data indicates the integral role gardening and public gardens can play in individuals' lives and the value of continuing

education in their gardening evolution.

The third category, participants' "gardening interests," was an important aspect of the personal history dimension. Participants all had 'plant passions' where they were interested in learning as much as possible about a specific group of plants. Their interest in visiting a public garden many times revolved around seeking information about their avid interest in plants. This finding is consistent with the horticulture industry's belief; that gardeners have highly specialized interests in particular plant species. The existence of hundreds of specific plant societies (i.e. The Cactus Society, The Rock Garden Society, The Orchid Society, The Hardy Fern Association) around the country reflects the diversity of plant passions of gardeners and the desire of gardeners to share their plant interests.

Findings Related to Social Connections

Although visiting a public garden is seen as a solitary activity, for the avid gardeners in this study, it was also a place where social connections were created and supported. This dimension represents the social interactions of avid gardeners through their gardening and how these interactions influence and shape the personal constructs of their gardening world. Social interaction through gardening was a way for participants to continue their education as well as associate with others who shared their interests and values. Five categories related to the social connection dimension emerged from the interview data. Three of the five categories were related to social interactions in a public garden while two spoke to a broader area of social interactions related to participants

gardening practices.

The first category in the social connection dimension was connection through volunteer work. Several participants found meaningful social interactions through their volunteer work in the Trial Gardens. In addition to gaining hands-on experience, participants noted the people they were able to meet through their volunteer efforts. One participant acknowledged his volunteer work as the vehicle which enabled him to network through others and obtain a part-time gardening job. Colleen's words summarize this category: "I keep volunteering in the Gardens because of the people I meet." This finding is consistent with the gardening volunteer literature. Studies indicate that social interactions are one of the rewards of volunteering (Norman, 1986; Barton, 1988). Data from this study adds to this literature and strengthens the fact that volunteer work can be meaningful for the social interactions it enables.

The second category in the social connection dimension was educating others. Several of the participants found social interaction by educating and sharing their knowledge of the Trial Gardens with others. These participants acted as Trial Garden ambassadors; they had a strong desire to inform and tell others of the Trial Gardens. One participant educated others about the Trial Gardens by volunteering to give tours and lectures. Not only did she fulfill her desire to share the Gardens with others but it was a significant way for her to interact with others who shared her interests. One participant would initiate conversation by asking others if they knew about the Trial Gardens. This was a meaningful way for him to share the Gardens with others. For these participants, gardening was a means to initiate social interactions. This finding extends our

understanding of the social dimension of avid gardeners. The 'educative role' which avid gardeners may possess informs us of the social characteristics and nature of avid gardeners. Avid gardeners who enjoy the 'educative role' have tremendous value to a public garden yet they are not mentioned in the public gardening literature. This study contributes to the literature by identifying the existence of such gardeners. Gardeners with such social interaction needs can satisfy their interests and at the same time act as an ambassador for a gardening organization, strengthening its awareness among the community. Plant societies and public gardens stand to benefit immensely through the involvement of such gardeners with their organization.

The third category to be discussed under the social connection dimension is visiting a garden. In discussing their experiences at the Trial Gardens, participants spoke about sharing their visits with family and friends. Visiting the Trial Gardens was a constructive way for participants to connect with others and strengthen their family and friendship bonds. Claire found the Gardens a valuable place to share gardening with her friends: "I can't tell you how many of my out-of-town friends I have taken there (the Gardens) and we always have a good time walking through and looking at everything. There is always something new to see." This study is the first to identify the social dimension of a garden visit and report it in the literature. Identifying that such a dimension exists and that it can be a significant part of a garden visitor's experience is important information in describing characteristics about avid gardeners. This finding tells us the importance of sharing a garden with others to the avid gardener. Sharing a garden can be a meaningful way for gardeners to learn. This finding supports the

contention of many (e.g., Knowles, 1975) that self-direction in learning does not necessarily take place in isolation.

The significance of the social connection dimension was also evident in the day to day gardening practices of a subgroup; those who were professional horticulturists. Being a professional horticulturist provided a special avenue to identify and interact with others who shared similar gardening beliefs. Through dealing with different clients and customers, the professional horticulturist participants were able to have meaningful social interactions. One participant mentioned the value of his job for the contact he was able to have with serious gardeners; gardeners like himself. Nowhere in the gardening literature was this aspect of a professional horticulturist work described; emphasis in past literature is placed on the relationship with plants, not people. This finding extends our understanding of the nature of the work of a professional horticulturist.

The last category to be discussed in this dimension was social connections of participant's gardening practices through plant societies. Participants found meaningful social interactions through their involvement with plant societies. Plant societies enabled participants in this study to have fellowship with other like-minded gardeners. Participants spoke about the value of plant societies, not only in terms of the education, but also for the social interactions. William's own words reflect the value of plant societies as a means for social connection: "I belong to Friends of The Gardens because I believe in what they are about and I just like being with people who value the same things I do." Plant societies provided a meaningful way for gardeners to strengthen their gardening interests by connecting and interacting with others who had similar values.

A review of the gardening literature found that it did not recognize the significant role plant societies play in a gardener's social development. Therefore, this is one of the first studies to document the social role of plant societies in an avid gardener's world. Recognizing plant societies as a meaningful way for gardeners to socially connect will help adult educators and horticulturists facilitate the social connections of gardeners which in turn enhance their learning.

This abundance of social interaction in a variety of contexts emphasizes what scientists, poets, and philosophers have suggested: humans are social beings. People feel the need to be connected, to have a sense of community. Gardening can be the vehicle for social connections. Though the contexts used by avid gardeners in this research may differ from other studies, this theme is consistent with other findings in the gardening literature. Studies of community gardens, neighborhood landscaping, and tree planting programs have documented the benefits of social interactions through gardening. Learning occurs through social interactions as well as pointed out by Candy (1991). He reports that personal constructs are influenced and restructured through the social interactions in which adults engage. In this sense, then, all of the social interaction contexts the gardeners in this study found meaningful have influence on what they learn.

Findings Related to Human Well-being

There is an affective interaction between avid gardeners and plants adding depth and meaning to their gardening world. The third dimension of a gardener's world represented these emotional benefits. Three categories related to the human well-being

and gardening dimension emerged from the interview data.

The first category in this dimension was labeled "gardening and its emotions". Within this category participants discussed the emotional benefits they experienced as a result of their gardening. Emotional benefits from gardening are consistent with a report by Relf (1992) that gardening acts as a source of spiritual renewal by entwining with the subconscious mind which is outside the awareness and control of the conscious mind. Participants in this study experienced an uplifting emotional interaction with plants through a public garden visit. It was a place where they experienced mental escape and relaxation as well as an emotional rejuvenation. Colleen's words reflect a common emotional experience participants would have visiting the Trial Gardens:

> *I can remember in particular one spring walking along in the Gardens and it was just real pleasurable and relaxing for me. It was colorful too and it got me all pumped up and made me want to go home and go out and buy some new plants and flowers and garden.*

Feelings of increased self-confidence and self-esteem were emotional benefits participants experienced as a result of their gardening. As participants felt successful with their gardening, their confidence and self-worth grew. Maddie expressed her emotions associated with her gardening success:

> *So I keep gardening and learning as much as I can about it to just keep getting more and more successful. I feel confident in myself now with all that I've learned and what I have done in my garden, but I still want to keep learning more so I can be even better.*

This facet of gardening has just recently been recognized in the horticulture literature and is just beginning to be explored. This emotional aspect of gardening is consistent with studies in the horticulture literature. These findings contribute to this

literature and support the notion that there is an affective dimension to gardening which attracts individuals to the activity and aids in sustaining their interests. In addition, it further defines characteristics of avid gardeners and extends our understanding of the role of gardening in their life.

"Gardening and its beauty" was the second category in the human well-being and gardening dimension. This category represented the role gardening and public gardens played in fulfilling participant's desire for beauty in their lives. Gardening as a means for creating beauty in their lives was an important reason cited by participants to garden. Maddie's own words best describe the use of gardening in creating a sense of paradise in participants' lives: "The part of gardening that appeals to me, is that artistic expression level that you finally get to in creating beauty in your life." This notion is consistent with an unpublished report by R. Kaplan (1976) where surveyed gardeners identified this aspect of gardening being an important factor in their overall gardening satisfaction. This finding is one of the first to be published which documents the need for beauty in one's life as a motivator for gardening. Recognizing the role gardening can play in fulfilling this need in individuals validates the importance of horticulture in our lives and will aid horticulturists in helping others add meaning to their lives. This finding, being the first to be published, adds to our understanding of the characteristics of avid gardeners.

The third category in the human well-being dimension was labeled "gardening and its connection to other interests". This category represents the role gardening played in enabling participants to integrate their love of plants with other interests and activities.

Photography, physical exercise, being outdoors, artistic expression, and earning income were interests participants found they could enjoy through their gardening activities. This notion is suggested in the horticulture literature but no concrete evidence of it playing a role in gardening satisfaction has been reported. This finding is the first to be reported in the literature and adds to our understanding of the characteristics of avid gardeners and the use gardening in their lives.

Findings Related to Learning Experiences

The final dimension to be discussed is the learning experiences of participants through their gardening. Gardeners choose to expand their gardening knowledge through a variety of sources and strategies. Eight categories emerged within the dimension of learning experiences, they include; 1) gardens, 2) books and magazines, 3) the Agriculture Extension Service, 4) plant societies, 5) volunteer work, 6) career, 7) veteran gardeners, and 8) the University of Tennessee Trial Gardens. This dimension of learning experiences not only spoke to how adults experienced and made meaning of public gardens and gardening, but it also reflected their beliefs of how a public garden affected their gardening practices.

The first category in the learning experiences dimension was the activity of visiting gardens. For the participants in this study, visiting a garden was a significant way to broaden their gardening education. Most gardens offer no implied path or direction of inquiry so visitors must be self-directed, as were the participants in this study. How a garden is experienced differs among individuals since each person brings

their accumulated knowledge and history to the perception of the environment. Though experiences were individual, participants shared common interests for visiting gardens. Participants were interested in three groups of information from their garden visit. These groups of garden information included: 1) plant study, 2) garden design, and 3) garden maintenance techniques. Through their observations and study of these three different groups of garden information, participants were able to make meaning from a garden visit. Maddie's words reflect a common feeling among participants in their use of gardens in their gardening education: "If I am to have a garden that I absolutely love then I'm going to have to see how other people created their gardens. Visiting different gardens has been a good way for me to learn and get ideas." The gardening literature suggests that garden visits can be a meaningful way to learn but only anecdotal research exists to support such a notion. This study is the first to document the use of garden visits as a significant learning resource and strategy for gardeners both in the adult and gardening literatures. It documents that learning occurs within a garden context. It is the first study to identify the specific learning interests of adults who visit a garden and categorize their interests into three groups of study which include 1) plant study, 2) garden design, and 3) garden maintenance techniques. Such information extends our understanding of the characteristics of avid gardeners and their non-formal learning habits and activities. These findings have tremendous value to the horticulture and adult education fields.

The second category in the learning experiences dimension was the use of gardening books and magazines. As participants spoke about their gardening learning

experiences, books and magazines emerged as a significant learning resource. Participants spent a great deal of time and money on such reading sources. The library and garden book clubs were valuable outlets for gaining access to such learning materials as well as bookstores and garden centers. The use of these learning resources is not surprising. Visiting any bookstore illustrates that the gardening section tends to be a prominent area. What was surprising in this study was the size of the personal gardening library of three of the participants as well as the substantial amount of money they spent each year for such learning resources. Spending close to a thousand dollars a year was not uncommon for three of the participants. This finding indicates the significance of books and magazines as learning resources for self-directed gardeners. This finding is new to the adult education literature in that no studies on gardeners, their learning experiences or learning resources have been documented. It extends our understanding of non-formal gardening education and self-directed learners and the resources they use to facilitate their learning.

The avid gardener's interaction with The Agriculture Extension Service was the third category in the learning experiences dimension. Participants found Extension personnel (county agents and state specialists), Extension publications and Extension programs (the Master Gardener Program) to be instrumental in their learning. Three of the participants had graduated from the Master Gardener Program and credited it as the backbone of their gardening education. One professional horticulturist participant made extensive use of the Extension State Specialist in his work of identifying and controlling insects and plant diseases. These gardeners sought help from the Extension Service

through their agents and publications because of their relevance to their gardening and for the expertise they readily shared. This finding supports the Extension Service mission; to be an educational resource for the public. The qualitative methodology used in this study in new to the Extension literature as well.

The fourth category in the learning experience dimension is involvement in plant societies. In addition to their use for social connections, plant societies were identified by participants to be an important resource for learning. Through guest lectures, educational seminars, workshops and conferences, participants felt plant societies were a meaningful place to learn. Participants identified the most significant educational use of plant societies as a source of the latest gardening information. Such information was of prime importance to the avid gardener population in this study. For the new and progressive information provided, Steven attends the annual conference of the Native Plant Society. His words best reflect the role plant societies play in participants' gardening education:

> *At the Native Plant Conference, I go there faithfully every year because it is things that are new and progressive and exciting and they're at all levels where everybody can learn something.*

This study identified that plant societies play a significant role in the learning experiences of gardeners. Participants valued plant society meetings because of the current information available. This identifies that up-to-date, current information is extremely important to gardeners.

The fifth category in the learning experience dimension is volunteer work. In addition to identifying their volunteer work as an important avenue for social

connections, participants reported it as a significant learning resource. Participants spoke about their volunteer work in the Trial Gardens. Through their interactions with Garden personnel and their hands-on experiences, volunteer work for participants in this study was a beneficial learning resource. Jonathan tells of the important role volunteer work in the Trial Gardens played in his gardening education:

> *I can't tell you how much I have learned from volunteering in the Gardens. It's where I have learned all about plants and the soil and mulch too. I never really knew how to take care of flowers in my garden and now because of my work in the Gardens, I do and my gardens show it.*

Public gardens regularly engage volunteers in their work. The public garden volunteer literature is dominated by perspectives from the public garden administration and how volunteers are useful to their work. Little attention is paid to the experiences of the volunteers themselves. The finding from this study tells us what an important resource volunteer work can be in a gardener's non-formal education. Knowing the value volunteer work can have in a gardener's learning can facilitate adult educators and public garden administrators in making volunteer activities more meaningful.

Work experience is the sixth category in the learning experiences dimension. Hands-on education was noted by participants as being a valuable teacher. Not only did it provide opportunities to learn from doing, but it allowed participants to put into practice what they had learned through other educational resources. It was a way for participants to evaluate and compare the relevance of information they learned through other sources to actual practice. This finding communicates the value of hands-on experience in learning. This suggest that one part of a quality gardening learning

experience is applying what one learns.

The seventh category of the learning experiences dimension was veteran gardeners. Participants identified older, veteran gardeners as a significant learning resource. Such seasoned gardeners are a rich source of information and experience. These findings further confirm the same findings from studies of other self-directed learners (Tough, 1979; Brookfield, 1984). Above and beyond professionals, participants valued the veteran gardeners expertise. One professional horticulturist participant found an outlet to connect with veteran gardeners through his work. A review of the gardening literature found no mention of this group of gardeners. This is the first study to identify this group of gardeners as a viable learning resource.

The final category to be discussed in the learning experiences dimension is involvement of avid gardeners with the University of Tennessee Trial Gardens. Because it was the focus of this study it is included as its own separate category rather than being included in the visiting gardens category. A public garden has much to teach to the observant visitor. Participants in this study identified the University of Tennessee as a significant learning resource in their non-formal gardening education. Common gardening information participants were interested in learning through their Trial Garden visits are broken into 3 groups of study which included: 1) plant study, 2) garden design, and 3) garden maintenance techniques. Through their observations and study of these three different groups of garden information, participants were able to make meaning from their visits. Regarding plant study, participants were most interested in learning plants which were new to them. More than any other information related to plant study,

participants used the Gardens to study plants which to them were unfamiliar. Participants also used the Trial Gardens to determine plant performance for Southern gardens, determine their plant preferences and what plants they would like to incorporate into their own garden, learn plant botanical names and sources, and finally to identify plants they had grown but never knew their common or scientific names. In relation to garden design, participants found the Trial Gardens to be a valuable resource in studying plant use, visualizing ideas, and observing design elements such as ground contours, bed outlines, and use of mulch. The use of visualization in learning in this study is similar to a finding by Leean and Sisco (1981) who studied rural adults with non-formal education and found the process of visualization to aid in guiding and motivating their self-directed learning. In relation to garden maintenance, participants used the Gardens to study transplanting practices, labor requirements, soil preparation, and garden aesthetics such as weeding, edging and mowing.

These findings tells us that public gardens are an important learning resource for learners, particularly for self-directed learners. It communicates that significant learning occurs within the context of a public garden. This is the first study to explore the learning experiences of adults to a public garden within the three groups of study which include 1) plant study, 2) garden design, and 3) garden maintenance techniques and to specifically identify the learning interests within these three groups of study. The phenomenological research method used in this study informs us that it is an effective technique in collecting meaningful, descriptive information about the learning experiences of adults to a public garden. These findings are significant to both the horticulture and

adult education fields.

Implications for Research and Practice

Implications for Research

Throughout the preceding summary of this research study, topics which warrant further research were mentioned briefly. In this section, the findings which the researcher feels most deserve further study will be discussed.

1. The avid gardener participants in this study were all introduced to gardening during their childhood. Several participants acknowledged that their positive childhood gardening experiences motivated them to garden as adults. This information suggests that research needs to be conducted to explore gardening education and children and the influence it has upon adult gardening activity.

2. This study identified that an avid gardening population exists and that such individuals who are deeply immersed in gardening find continuing education a significant dimension of their gardening. The data implies that significant learning occurs within the context of the Master Gardener Program, plant societies, and public gardens and that gardening books and magazines, and public garden volunteer experiences are all meaningful learning resources and strategies. These findings suggests that additional studies exploring the use of these and other learning resources and strategies need to be conducted to deepen our understanding of their users and their learning experiences. Research studies to explore the aspects of these resources which are most meaningful and

valuable to learners would extend our understanding of these resources.

3. This study suggests that there is a group of gardeners who are 'expert' who participate in formal and non-formal gardening education programs. These programs in the past have presumed that participants possess a limited knowledge of gardening. Future research could explore novice and expert formal and non-formal educational programs.

4. For several participants in this study, the pursuit of the 'educative role' brought great satisfaction to their gardening. Such expert gardeners enjoyed teaching and instructing others about gardening. Future research could explore this 'educative role' and identify the key characteristics of individuals who desire to play this role. Such information would extend our understanding of adult avid gardeners and assist those who facilitate their learning. Future studies could examine how such gardeners could be facilitated in taking on the 'educative role'. Studies which explore the use of such individuals in public gardening entities would be beneficial to practitioners.

5. This study identified that social connections were created and supported through garden visits, plant association involvement, and volunteering in a public garden. This finding suggests that an important aspect of gardening can be the social interactions it fosters. It tells us that gardening activities do not take place in isolation. Future research could identify and explore the different factors which support gardener's social interactions and the different gardening contexts in which they are able to find meaningful social connections.

6. The findings from this study suggest that there is an affective interaction

between avid gardeners and plants adding depth and meaning to their gardening world. This finding strongly suggests that more studies to explore this dimension of gardening will help deepen our understanding of the role plants and gardening play in an individual's well-being. More studies to identify the ways in which individuals use gardening to add meaning to their lives will broaden our understanding of people and plant interactions. Studies which explore how individuals integrate gardening into their lives will inform horticulturists and educators of alternative markets currently not utilized for teaching and selling plant products. Such information has the potential to expand the economic base of the horticulture industry. The qualitative inquiry used in this study is new to the horticulture literature and demonstrates that it is an effective tool in prompting individuals to express their emotional experiences associated with gardening. Relf (1992) suggests that with the guidance of social scientists, interdisciplinary efforts will assist horticulturists in exploring this important dimension of gardening.

7. This study presented a conceptual model of an avid gardener's world. The model is not only intended to serve as a way of better understanding the gardening experiences of adults, but it can also serve as a framework for building future theory, research, and practice.

Implications for Practice

The findings of this study provided several areas for recommendations for practice. The following discussion will focus on the recommendations for practice which the researcher feels most relevant.

1. Childhood gardening education and experiences appeared to play a role in the adult gardening journey. There is a clear need to teach children an appreciation of gardening through active participation. Public garden educators should include a children's gardening program as an aspect of their overall educational program. Designing educational programs targeted for children has the potential of expanding the future economic base of the horticulture market. As adult educators and horticulturists facilitate the gardening education of adults, they need to recognize the indirect role they have upon children, the future gardening audience.

2. This study suggests that there is a group of gardeners who are 'expert' who participate in formal and non-formal gardening education programs. Such programs in the past have presumed that participants possess a limited knowledge of gardening. To the practitioner, this finding indicates the need of designing educational programs that would meet the interest and needs of 'expert' gardener participants.

3. This study found that avid gardeners place a high on significance learning through the Master Gardener Program, plant associations, and public gardens. Recognizing the significance which avid gardeners place upon these resources, adult educators and horticulturists could look for ways within these learning contexts to facilitate learner's needs. This stresses the importance of educators and horticulturists being aware of the availability of The Master Gardener Program and the existence and diversity of plant associations and public gardens so they may direct gardeners to those which relate to their gardening interests as well as provide educational assistance to these groups and organizations.

4. The positive impact of social interactions to the volunteer experience is an important finding for professionals who coordinate volunteer gardening programs. Professionals who design volunteer programs should promote interactions between volunteers and a variety of individuals (i.e. horticulture professionals, other volunteers, the public) to heighten the volunteer experience.

5. This study found that avid gardeners not only engage in a learning role but also engage in an 'educative role'. Therefore, formal and non-formal programs should be designed to offer these 'expert' gardeners opportunities to share their expertise. Public garden administrators have much to gain by identifying this population of gardeners within their organization and utilizing their interests and talents. Assessing this population's needs and interests would enable administrators to utilize them to the fullest extent. Determining how such gardeners could best benefit an organization through their educative role, would increase their participation and satisfaction with the organization, enhancing it's role and knowledge in the community.

6. Findings from this study suggest that an important aspect of a garden visit can be the social interactions. It tells us that visiting and learning from a garden does not take place in isolation. Public garden administrators may consider looking for ways to enhance social interactions of their visitors. Assessing the needs of visitors to increase their satisfaction with this aspect of their visit can only improve the public garden's role in their gardening. Picnic pavilions, increased seating in the gardens, and interactive plant displays are suggestions of what administrators might investigate with visitors to determine if it would increase their garden visit satisfaction.

7. Recognizing the positive social interactions participants in this study enjoyed through their plant society involvement, adult educators and horticulturists should encourage their customer's participation in them for the social benefits they offer. This suggests that adult educators and horticulturists should familiarize themselves with the different plant societies to direct gardeners to those which would be of interest and a potential source of social development and education.

8. This study found that there is an affective dimension to gardening which adds depth and meaning to an avid gardener's plant world. This information has immense value to the horticulture industry. This communicates to practitioners the need to consider the affective dimension of gardening and integrating this aspect of gardening into educational programs and activities. This finding supports the practice of therapeutic horticulture and encourages the offering of therapeutic gardening programs.

9. Participants in this study integrated their gardening into other interests in their lives. Offering workshops which integrate different interests with gardening such as photography, bird watching, nature walks, and insect identification would enable gardeners to integrate their gardening into other aspects of their lives; expanding the use and role of gardening in society.

10. Findings from this study suggest that though books and magazines are prevalent in our lives, horticulturists and educators should not underestimate their value in the non-formal gardening education of self-directed learners. Professionals should acquaint themselves with garden book and magazine resources such as bookstores, catalogs and book clubs to assist gardeners in their use of these learning resources.

11. Extension professionals might benefit by furthering their knowledge of the avid gardener population this study identified. This gardening population has the potential of being useful to Extension work as gardening assistants and advisors through the Master Gardener Program. The more the Extension Service can learn about this population the greater the opportunity for a mutually beneficial relationship.

12. By recognizing the importance that participants in this study placed upon learning through plant societies, educators would be wise to familiarize themselves with the multitude of plant societies which exist and what each has to offer. In this way, educators themselves would be a valuable resource to learners about what plant societies exist. Administrators, adult educators and executive committees of plant societies need to learn as much about the audience they serve to better meet their needs.

13. This study identified that 'veteran gardeners', those well seasoned with gardening experience and practical knowledge, are a valuable learning resource for gardeners. This finding indicates that professionals and educators would benefit by recognizing this unique group of gardeners as a learning resource and searching for methods to utilize and connect them with other gardeners.

14. This study found public gardens to be a meaningful and significant learning resource for avid gardeners. This suggests that horticulturists and adult educators should recognize the significance of public gardens as a learning resource in a learner's non-formal gardening education. In facilitating their learning, educators should recommend and encourage learners to visit and make use of public gardens as part of their gardening education. These findings support the existence of public gardens as a learning resource

and could be a significant marketing tool to stimulate their public and financial support.

15. This study identified that the information sought by avid gardeners in a garden can be categorized into three groups: 1) garden study, 2) garden design, and 3) garden maintenance techniques. Categorizing and presenting garden information in such a manner would be meaningful to avid gardener learners. Information specifically sought in each category of garden information includes:

> 1) plant study - avid gardeners desire to learn: unfamiliar plants, plants newly introduced to the market, plant performance, plant preferences, botanical names, plant sources.
>
> 2) garden design - avid gardeners desire to: learn plant use, visualize ideas, and observe design elements such as ground contours, bed outlines, and use of mulch.
>
> 3) garden maintenance techniques - avid gardeners desire to study - transplanting practices, labor requirements, soil preparation, and garden aesthetic practices such as weeding, edging and mowing.

These findings help direct the growth and development of public gardens in teaching their visitors about plants and gardening. We need to better understand from both a teaching and learning perspective what is most effective in public garden visitor's learning, then apply that knowledge to the selection and display of plants, garden design, and garden maintenance.

Contributions of This Study to Adult Education

This study was one of the first to explore and characterize non-formal education, self-directed learning using public gardens and gardeners. This study contributes to the adult education literature by informing us of the learning experiences of a unique group of self-directed learners: avid gardeners. It extends our understanding of this type of learning and the characteristics about the individuals and their learning experiences. This study continues the line of qualitative research inquiry of self-directed learning (Brookfield, 1981; Leean and Sisco, 1981; Spear and Mocker, 1984). This study affirms prior self-directed learning research that adults do engage in learning in non-formal settings (Tough, 1979; Penland, 1979; Brookfield, 1984). Further, this study presents findings that self-directed learning in non-formal settings does not mean learning in isolation (Knowles, 1975; Brockett and Hiemstra, 1991; Merriam and Caffarella, 1991). Similar to a study of independent learners and their learning activities by Brookfield (1984), this study found that key individuals, particularly parents, in the lives of these avid gardeners were instrumental in awakening their gardening interests. Also, as already noted, visualization was a technique used by participants to guide their self-directed learning activities. This finding is similar to Leean and Sisco's (1981) study of rural adults with non-formal education.

This study is the first to document the resources and strategies used by avid gardeners in their self-directed learning efforts. They drew upon a wide variety of sources, used diverse strategies for learning, and suggested significant learning outcomes from these non-formal experiences. This study extends our understanding of the

resources used by avid gardeners in their self-directed learning efforts. These adults used the learning resources of public gardens, gardening books and magazines, volunteer work, plant societies, the Agriculture Extension Service, the professional horticulturist career, and veteran gardeners. This study adds to the literature on such resources by elaborating on self-directed learning activities with each.

The learners in this study represent the notion of constructivism as put forth by Candy (1991) and discussed in Chapter 2. He argues that as people develop and mature, they acquire a set of personal constructs that act as the perceptual filter through which they observe, experience, and evaluate events. He states: "These personal constructs are not immutable - they can be changed - but they provide the framework through which, and into which, all new learning is appropriated" (p. 278). This study presents a conceptual model of the personal constructs which compose the avid gardener's world. It suggests a way for us to conceptualize and advance our understanding of the learning of self-directed learners who visit a public garden. The model divides the avid gardener's world into four dimensions which represent their personal constructs through which, and into which, they experience their gardening. The four dimensions through which avid gardeners experience their plant world and construct their gardening knowledge include: 1) personal history, 2) social connections, 3) human well-being, and 4) learning experiences. Each of the dimensions in this model contributed to the overall learning of the adult gardener participants. As an illustration of this model, the researcher would like to draw on an example of Maddie and her evolution as a gardener. She credits her self-directed learning efforts as bringing her to the gardening level she

now enjoys. On reflecting on her current understanding and knowledge of gardening she notes:

> *I've progressed to the point where I can now look at a bare patch of land and I can think about how I want it to be. Before I couldn't make that leap in imagination either. If I didn't see a picture of it in a book or hadn't seen it before somewhere I couldn't take a little of this and a little of that to create something of my own, but now I can do that. And that comes from extensive reading, extensive looking while I'm traveling, extensive thinking about what I want the final project to look like or be, it's purposes, it's function.*

Towards a Theory of Gardening Education

The findings from this study suggest a new field of research and practice; gardening education. This study explored the beliefs and actions of gardeners to gain a better understanding of their gardening history, gardening practices, gardening education and how they made use of public gardens in their gardening world. The findings of this information presented in this dissertation provide the basis for a new research agenda in horticulture. Combining the fields of adult education and horticulture, this new field of gardening education could explore gardening participants and their beliefs, actions, and learning. The field of horticulture has traditionally focused on extending the knowledge and understanding of plants. It has given little attention to gardeners and those who would like to be gardeners. It seems only appropriate for the horticulture industry to learn as much about those who garden. As C.A. Lewis (1992) notes:

> *For whose benefit are horticultural books written, botanical societies, plant societies, and garden clubs established? Were Latin plant names invented so that plants would know who they were, or so that people could communicate with each other about specific plants? Are plants sought, discovered researched, propagated, bred, bought and sold for the benefit*

of plants or to satisfy the interests of people? Plants do not need people; but indeed, people do need plants. (p.11)

The field of horticulture is characterized by a bewildering array of programs, agencies, and personnel working to assist adults with their gardening. It is the focus on adults as gardeners and the distinguishing characteristics of the gardening education process that would distinguish the gardening education field from other areas of horticulture and education. As this study has noted, there is a substantial amount of literature on the topic of gardening but much of it is descriptive and anecdotal. In creating a theory of gardening education, researchers need to consider both individual and group learning efforts as well as both formal and non-formal educational outreach to adults.

A first step towards the development of a theory is to descirbe and understand the meanings and actions of gardening. Systematic lines of inquiry into gardening education, with one study building on another, would help raise questions and extend our understanding of gardening motivation, participation, and satisfaction. In addition, systematic investigations of self-directed learning, expert developed instruction, as well as potential differences between child and adult studies of gardening should be pursued. This new field of study and practice could seek to extend our understanding and knowledge of gardeners, their characteristics, interests, and how and what they learn. Study in this field could explore gardening and the context in which it takes place, who participates and why, how and what adult gardeners learn, the nature of the learning process itself, the development of theory in gardening education, and other issues relevant to the practice of gardening education. There is a need for educators and horticulturists to develop models and theories of gardening education to help explain the

role of public gardens. The development of models and theories to help explain and guide practice as well as to direct future research efforts would need to be done.

Houle (1974) notes that all theories address four basic concerns: the nature of the learner, the goals sought, the social and physical milieu of instruction, and the techniques of learning and teaching. People who would study the organization and processes of gardening education need guiding frameworks; so do those who practice the art. Ultimately, we need strong theories to guide our research efforts, but first we need concepts to frame our thinking and to underpin our practice. As Peters (1980) points out "a recognized area of professional practice needs a knowledge base as well as guiding conceptual frameworks" p. 16.

LIST OF REFERENCES

List of References

Amiel, H. F. (1990). In B. M. Ohrbach, A boquet of flowers. New York: Clarkson Potter.

Bayha, R. A. (1984). Self-directed learning readiness of northwest missouri farmers as related to learning resource choice and valuing (Doctoral dissertations, Kansas State University, 1983). Dissertation Abstracts International, 45, 50A.

Bogdan, R. & S. Bilken. (1992). Qualitative research for education. Boston: Allyn and Bacon.

Brennan, T. (1977). Typical zoo visitor social group behavior. AAZPA Annual Meeting Proceedings.

Brennan, T. (1977). Elements of social group behavior in a natrual setting. Chicago: Brookfield Zoo.

Briggs, G. & W. McDevitt. (1989). Dream before you pick. The Public Garden. 4(1), 16-19.

Brockett, R. & R. Hiemstra. (1991). Self-direction in adult learning. London: Routledge.

Brookfield, S. (1984). Self-directed adult learning: A critical paradigm. Adult Education Quarterly, 35(2), 59-71.

Bruner, J. (1973). Beyond the information given. New York: Norton.

Bruner, J. (1986). Actual minds, possible worlds. Cambridge, MA: Harvard University Press.

Candy, P. (1991). Self-direction for lifelong learning. San Francisco: Jossey-Bass.

Candy, P. (1988). On the attainment of subject-matter autonomy. In D. Boud (ed.), Developing student autonomy in learning. (2nd ed.) London: Kogan Page.

Candy, P. (1982). Personal constructs and personal paradigms: Elaboration, modification, and transformation. Interchange on Education Policy, 13(4), 56-69.

Carr, D. (1985). Self-directed learning in cultural institutions. In S. Brookfield (Ed.), Self-directed learning: from theory to practice. New Directions for Continuing Education, no. 25. San Francisco: Jossey-Bass.

Carr, D. (1992). Cultural institutions as structures for cognitive change. In L.A. Cavaliere and A. Sgroi (Eds.), Learning and personal development. New Directions for Continuing Education, no. 53. San Francisco: Joseey-Bass.

Carter, A. (1993). In M. P. Robbins, A gardener's bouquet of quotations. New York: Penquin Books.

Coats, A. (1993). In M. P. Robbins, A gardener's bouquet of quotations. New York: Penquin Books.

Cheek, N. (1976). Sociological perspectives on the zoological park. Leisure and Recreation Places. Ann Arbor: Ann Arbor Science Publications, inc..

Chene, A. (1983). The concept of autonomy in adult education: a philosophical discussion. Adult Education Quarterly, 34(1), 38-47.

Clark, H. and L. Manzo. (1988). Community gardens: Factors that influence participation. In Proceedings of 19th Annual Conference of Environmental Design Research Association. 19(pp.57-61). Pomona, CA.

Dash, R. (1993). In M. P. Robbins, A gardener's bouquet of quotations. New York: Penquin Books.

Fellenz, R. (1985). Self-direction: A clarification of terms and causes. In Proceedings of the 26th Annual Adult Education Research Conference (pp. 164-169). Tempe, AZ.

Franz, C. and R. Van Cleave, D. Franz & A. Van Cleave. (1990). A Thematic analysis of the expectations and experiences of the great smoky mountain visitor. USDA Forest Service Southeastern Forest Experiment Station. Report SE-67, 12.

Gergen, K. J. (1991). The saturated self: Dilemmas of identity in contemporary life. New York: Basic Books.

Glesne, C. & A. Peshkin. (1992). Becoming qualitative researchers. New York: Longman.

Goetz, J. & M. LeCompte. (1984). Ethonography and qualitative design in educational research. San Diego: Academic Press, Inc.

Guba, E. G., and Lincoln, Y. S. (1989). Fourth generation evaluation. Newbury Park, CA: Sage.

Hayward, D. & J. Larkin. (1983). Evaluating visitor experiences and exhibit effectiveness at old sturbridge village. Museum Studies Journal, 1(2), 42-50.

Hood, M. (1981). Adult attitudes toward leisure choices in relation to museum participation. (Doctoral dissertation, The Ohio State University, 1981). University Microfilms International, Ann Arbor MI.

Houle, C.O. (1972). The Design of Education. San Francisco: Jossey-Bass.

Houle, C.O. (1961). The inquiring mind. Madison: University of Wisconsin Press.

Jekyll, G. (1993). In M. P. Robbins, A gardener's bouquet of quotations. New York: Penquin Books.

Kaplan, R. (1973). Some psychological benefits of gardening. Environment & Behavior, 5(2), 145-162.

Kaplan, S. (1992). The restorative environment: nature and human experience. In D. Relf (Ed.), The role of horticulture in human well-being and social development: A national symposium. Portland, OR: Timber Press.

Kaplan, S. and R. Kaplan. (1982). Cognition and environment. New York: Praeger.

Kasworm, C. (1983). Self-directed learning and lifespan development. Internationl Journal of Lifelong Education, 2(1), 29-46.

Kathrein, M. A. (1981). A study of self-directed continued professional learning of members of the Illinois Nurses' Association: Content and process (Doctoral dissertation, Northern Illinois University). Dissertation Abstracts International, 42, 1902A.

Kellert, S. (1979). Zoological parks in american society. AAZPA Annual Meeting Proceedings.

Kelly, G. (1955). The psychology of personal constructs. New York: Norton.

Knorr-Centina, K. D. (1981). The manufacture of knowledge: An essay on the constructivist and contextual nature of science. New York: Pergamon.

Knowles, M. (1975). Self directed learning. Chicago: Follett Publishing Co..

Knowles, M. (1984). Andragogy in action: applying modern principles of adult learning. San Francisco: Jossey-Bass.

Kwong, D. (1977). Lion/Tiger area study and crowned crane trail study. The National Zoo, Washington, D.C..

LeCompte, M. & J. Preissle. (1993). Ethonography and qualitative design in education research. New York: Academic Press.

Lewis, C. (1991). A humanist role for public gardens. American association of botanical gardens and arboreta newsletter. (194), 1.

Lewis, C. (1992). Effects of plants and gardening increating interpersonal and community well-being. In: D. Relf (Ed.), The role of horticulture in human well-being and social development: A national symposium. Portland, OR: Timber Press.

McCracken, G. (1988). The long interview. Newbury Park: Sage Publications.

Merriam, S. (1988). Case study research in education. San Francisco: Jossey-Bass.

Merriam, S. & R. Caffarella. (1991). Learning in adulthood. San Francisco: Jossey-Bass.

Mocker, E., & Spear, G. (1982). Lifelong learning: Formal, informal, and self-directed learning. Kansas City: Center for Resource Development Education, University of Missouri-Kansas City. (ERIC Document Reproduction Service No. ED 220 723).

Morris, J.F. (1978). The planning behavior and conceptual complexity of selected clergymen in self-directed learning projects related to their continued professional education (Doctoral dissertation, University of Toronto, 1977). Dissertation Abstr acts International, 39, 1994A.

National Gardening Association Gallup Poll. (1991). Burlington: National Gardening Association.

Oddi, L. (1984). Development of an instrument to measure self-directed continuing learning. Dissertation Abstracts International, 46(01A), 49.

Oddie, L. (1985). Development and validation of an instrument ot identify self-directed continuing learners. Proceedings of Twenty-Sixth Annual Adult Education Research Conference (pp. 230-235). Arizona State University:Tempe.

Patton, M. (1990). Qualitative evaluation and research methods. Newbury Park: Sage.

Peters, J. (1980). Building an effective adult education enterprise. San Francisco: Jossey-Bass.

Pliskin, J. (1981). The effects of copy format on reading behavior and learning. Oklahoma City Zoo Journal.

Rabb, G. (1969). The unicorn experiment. Curator, 12(4), 257-262.

Relf, D. (1990). The role of horticulture in human well-being and social development: a national symposium. Portland, OR: Timber Press.

Reque, B and L. Wilson. (1979). Getting the message out of the bottle...from shedd aquarium to chicago schools. John G. Shedd Aquarium Studies. Chicago: Shedd Aquarium.

Rymell, R.C. (1981). Learning projects pursued by adult decreed engineers (Doctoral dissertation, North Texas State University, 1981). Dissertation Abstracts International, 42, 936A.

Roberts, L. (1990). Getting to know your constituencies: Why? how? when?. The Public Garden. 5(2), 10-42.

Schroeder, H.W. (1991). The spiritual aspects of nature: aperspective from depth psychology. Proceedings from the northeastern recreation research conference. Saratoga Springs, NY.

Schulhof, R. (1990). Visitor response to a native plant habitat exhibit. Visitor Behavior. 5(4), 11-12.

Schwandt, T. A. (1994). Constructivist, interpretivist approaches to human inquiry. In N. Denzin & Y. Lincoln (Eds.), Handbook of qualitative research (pp.118-138). London: Sage.

Serrell, B. (1977). Survey of visitor attitude and awareness at an aquarium. Curator. 20(1). 48-52.

Smith, S. (1986). Why A Botanical Garden? The Public Garden. 4(1), 14-15.

Spradley, J. (1980). Participant observation. New York: Holt, Rinehart and Winston.

Taylor, M. K. (1990). The healthy gardener. Flower & Garden. Mar./Apr., 46-47.

Tough, A. (1979). The adult's learning projects: A fresh approach to theory and practice in adult learning. Toronto, Ontario, Canada: Ontario Institute for Studies in Education.

Ulrich, R. S. (1979). Visual landscapes and psychological well-being. Landscape Research. 4(1), 17-23.

Ulrich, R. S. (1983). Aesthetic and affective response to natrual environment. In I. Altman and J. Wohlwill (Eds.), Behavior and the natural invironment. New York: Plenum.

Ulrich R. S. and R. Parsons. (1992). Influences of passive experiences with plants on individual well-being and health. In D. Relf (Ed.), The role of horticulture in human well-being and social development: A national symposium. Portland, OR: Timber Press.

USDA Economic Research Report. (1994). Washington D.C.: USDA Economic Research Service.

Wolf, R. and B Tymitz. (1979). Do giraffes ever sit?: A study of visitor perceptions at the national zoological park. Washington D.C.: Smithsonian Institute.

APPENDICES

APPENDIX A

INTERVIEW GUIDE

Visits to Public Gardens: Its Meaning for Avid Gardeners

Research Questions: 1) How do adults experience and make meaning of a public garden?

2) How do adults describe their gardening involvement and how do they perceive their visit to a public garden to influence their gardening practices?

Interview Questions

1. Tell me about your experience with the University of Tennessee Trial Gardens over time.

   possible prompt - tell me what surprised you about your visit

   possible prompt - what caused you to visit the Research Gardens

   possible prompt - what were you looking for

   possible prompt - what did you take interest in

2. Think of another time when you visited the Trial Gardens and tell me about your experience.

   possible prompt - what surprised you about your visit

   possible prompt - what caused you to visit the Trial Gardens

   possible prompt - what were you looking for

   possible prompt - what did you take interest in

3. Tell me about your experience as a learner in the Trial Gardens.

   possible prompt - tell me, if anything, what you were interested in learning

   possible prompt - what did you gain by visiting the Research Gardens

4. Tell me about your experience as a gardener.

   possible prompt - how long

   possible prompt - what type

   possible prompt - where do you get your ideas for gardening

   possible prompt - what has influenced your gardening practices

5. Demographic Questions:

   a. How often do you visit the Trial Gardens?

   b. Gender

   c. Age

   d. Profession or occupation

APPENDIX B

Consent Form

The purpose of this study is to obtain qualitative information concerning the experiences of adults who visit the University of Tennessee Trial Gardens.

You will participate in an informal interview that will last approximately 30 minutes. The interviews will be audiotaped. Your responses to the interview questions will be kept completely confidential and the tapes will be stored in a locked filing cabinet in my office. I will be the only person with access to the tapes. You will be given a pseudonym to ensure your anonymity in the presentation of results. This consent form will be stored along with the interview tapes.

There are no foreseeable risks involved in your participation in the project nor are there direct benefits to you. Participation will, however, provide you with the opportunity to reflect on your own experience and it will help increase general knowledge concerning visitors to University Trial Gardens.

Your participation in this project is entirely voluntary and you may refuse to answer specific questions or you may withdraw at any time without penalty. If you have any further questions about this project, please contact Susan Wilson at 1316 Bradford LN, Knoxville, TN 37919, or call (615) 974-7324.

****

I fully understand the explanation of the project and I agree to participate.

_____ _____

Name Date

_____

Signature

VITA

Susan L. Wilson was born on September 6, 1958 in Springfield, Ohio where she attended grade school. She attended secondary schools in Downingtown, Pennsylvania and finished high school in Gallatin, Tennessee. She received her bachelors degree in Ornamental Horticulture and Landscape Design from the University of Tennessee in 1980. Completing a masters degree in Horticulture with a specialty in floriculture from The Ohio State University in 1983, she returned to the University of Tennessee to work in the Department of Ornamental Horticulture and Landscape Design as an instructor and research associate. Having a passion for plants and a love for teaching, Susan decided part-time to pursue a doctorate in adult education which would allow her to combine horticulture and teaching adults. Upon the completion of her doctorate in May of 1995, Susan was promoted to assistant professor in the Department of Ornamental Horticulture and Landscape Design at the University of Tennessee where her responsibilities include 75% teaching and student advising and 25% research. Her research interests include herbaceous plant variety trials and adult gardeners.