

DEVELOPING AN INTRODUCTION TO HORTICULTURAL THERAPY COURSE FOR
COLLEGE STUDENTS

by

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Abstract

Educational opportunities in horticultural therapy at colleges and universities are currently experiencing a minimal level as compared to the time of their development in the early 1970's. While there is an education decline in horticultural therapy, there is a rebirth of interest in this therapeutic modality taking place within the medical profession. Due to the lack of availability of university introductory-level horticultural therapy courses throughout the United States, it is important to ascertain what topics are needed for inclusion in an introductory course. A survey was sent to 13 horticultural therapy practitioners, 11 university instructors, and 8 students. Overall, responses of practitioners and professors were varied in their opinions. The one topic of importance in which they agreed was horticultural therapy definitions, as definitions for horticultural therapy, horticultural therapist, and horticultural therapy programs. A majority of horticultural therapy practitioners indicated that horticultural therapy history and theories are important topics for an introductory horticultural therapy course. A majority of the professors reported that horticultural therapy settings are a somewhat important topic. Topics of interest to students who had taken an introduction to horticultural therapy course included interaction with special populations (for example, elders, children, patients in physical rehabilitation), the use of adaptive gardening techniques and tools, and measuring the benefits of horticultural therapy. Topics of interest about which students wanted to learn more were ways in which to help each population through planned activities and how to reach horticultural therapy goals planned for patients and clients. Results of a literature search was conducted in which sources of information indicated that there have been declines in educational opportunities over time and a lack of

growth in these opportunities. Based on the survey results and literature review, an introductory horticultural therapy course was developed. An introduction-type course is one that briefly introduces most, if not all, topics that will be studied in depth in more advanced courses. It should be designed in such a way that interests students and encourages them to continue their studies in the program. At the same time, the concerns and interests of the practitioners and professors need to be considered in the design of the course. As a result, the course was planned and includes the topics that are of interest to the participants in the surveys. The topics include horticultural therapy history, theories, definitions, program types, client/patient groups, settings, and the people-plant relationship.

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Dedication

This Report is dedicated in honor of my Heavenly Father who has guided me throughout my education endeavor; my loving husband and soul mate, Stan, for his encouragement and support; my dear mother, Vivian Foote, who loved to garden and enjoyed beautiful flowers; and my dear friend, mentor, and horticulture instructor, Jane Gloyd, who encouraged all of her students to strive for excellence in education.

Horticultural Therapy (HT) Definitions

Horticulture: “The art and science of growing flowers, fruits, vegetables, trees, and shrubs resulting in the development of the minds and emotions of individuals, the enrichment and health of communities, and the integration of the “garden” in the breadth of modern civilization” (Simson and Straus, 1998, p 21).

Horticultural therapy: “A process through which plants, gardening activities, and the innate closeness we all feel toward nature are used as vehicles in professionally conducted programs of therapy and rehabilitation” (Simson and Straus, 1998, p 3).

Horticultural therapist: A professionally-trained person who plans horticultural activities and programs that are prescribed and designed for specific clients and patients. “A client-centered approach that respects the desires and individuality of each person served is essential” (Simson and Straus, 1998, p 67).

Horticultural Therapy Program: “A therapeutic program in horticultural therapy is designed to assist individuals in recovery from illness or injury. Reentry into the mainstream of society (in work, place of residence, and leisure activity), to whatever extent possible, is the ultimate aim for those served. Professional services may include physical exercise, cognitive development, counseling, mental health services, communication skills development, and adaptations of structures, tools, and/or techniques. The medical basis for treatment in therapeutic programs focuses on disease and its remediation or cure. To be therapeutic is to be curative or to serve to preserve health. Broad application of this model is found in horticultural therapy programs” (Simson and Straus, 1998, pp 54-55).

Program Types: Vocational, Therapeutic, and Social:

“**Vocational Horticultural Therapy Programs** are primarily concerned with enhancement of skills and/or behaviors that lead to employment for those clients served. Services may include prevocational and vocational training, job placement and/or supported employment. The desired outcome for individuals in (a program of this type) is placement in the least restrictive environment in which the individual functions successfully, such as sheltered, supported, or competitive work settings” (Simson and Straus, 1998, pp 44, 45).

Therapeutic Program Types, that are based on a medical model (involving the treatment of someone who is ill or injured), may include physical rehabilitation, psychiatric, or long-term care. “Reentry into the mainstream of society (in work, place of residence, and leisure activity), to whatever extent possible, is the ultimate aim for those served. Professional services may include physical exercise, cognitive development,

counseling, mental health services, communication skills development, and adaptations of structures, tools, and/or techniques” (Simson and Straus, 1998, pp 44, 54-55).

“**Social Programs** enhance leisure skills and quality of life and are often activity based.” These programs “serve to improve the general well-being of participants, often through the use of gardening as a leisure activity. Horticulture is seen as a valuable recreational pursuit. Interaction with others is encouraged as part of a process to increase life satisfaction and general well-being” (Rothert and Daubert, 1981). “Based primarily on the wellness model, social programs are more concerned with the growth of the whole person than with treatment of a specific disease or injury” (Austin, 1991). “Activities that promote health of body, mind, and spirit are offered by the therapist” (Simson and Straus, 1998, pp 44, 60-61).

Horticultural Therapy Settings: Various settings are found in the three types of programs: Vocational-Public schools, sheltered workshops, correctional facilities, industry; Therapeutic-Rehabilitation hospitals, psychiatric hospitals, long-term care residential care facilities; Social-Retirement homes, community gardens, residential group homes, senior centers (Simson and Straus, 1998, pp 47, 48, 55, 61, 62).

Assessment: “The first step in evaluating an individual to determine what goals and objectives are appropriate for them. Assessment should be done formally at periodic intervals and informally within each treatment session to fine tune the treatment plan and maximize the therapeutic benefits for the individual...Assessing and providing for the specific treatment plan for each individual can go a long way in motivation toward therapy and therapeutic gains” (Simson and Straus, 1998, p 86).

Program Planning (Setting Program/Treatment Goals, Objectives, Plans): Program planning consists of Setting Program/Treatment Goals, Objectives, and Plans. Horticultural therapists establish specific therapeutic needs by testing patients. Objectives are the steps taken to achieve a goal. Plans present treatment issues, goals, horticultural therapy goals, and objectives. (Simson and Straus, 1998, pp 141, 142).

Program Evaluation: “Health care needs are constantly changing so it is important to evaluate programs periodically to see if it is meeting the needs of the industry. This is particularly necessary to see if the program is efficient, up to date with the latest equipment, materials, trends, and information to meet the changing demands of the population(s) served” (Simson and Straus, 1998, p 452).

Holistic View of Humans: “Therapy emphasizes the demonstration, by therapists, unconditional positive self-regard (genuine acceptance), empathic understanding (ability to perceive another’s world), and attunement with the patient to facilitate the experience of his or her own worth, uniqueness, and authenticity” (Simson and Straus, 1998, p 179).

Funding: “As a lifelong therapy, horticultural therapy is very cost-effective. Dollars spent on horticultural therapy at any stage of a person’s rehabilitation contribute to a real-life activity that survivors who need lifelong support can continue to build on...Horticultural therapy can even fulfill different needs at different times in a

survivor's recovery process...A key challenge for proponents of horticultural therapy is to make sure the benefits of this particular therapy are recognized by case managers who must fight for the funds to continue its usage...(Horticultural therapy's) myriad of therapeutic and real-life benefits must be repeatedly emphasized and documented in order to be taken seriously" (Simson and Straus, 1998, p 125).

CHAPTER 1 - Introduction

The availability of horticultural therapy study programs has experienced peaks and valleys during the past 35 years. Historically speaking, educational offerings in horticultural therapy at colleges and universities are currently experiencing a minimal level as compared to the time of their development in the early 1970s. Education programs were not available until a curriculum was established at Kansas State University, with the endorsement of the Menninger Foundation in 1972 (Odom, 1973). In the years to follow, numerous colleges and universities organized similar programs.

The idea of formal academic training in horticultural therapy came into view in 1968 after many years of its practical application in hospitals and other institutions by trained therapists and volunteers. In 1972, universities began offering degrees in horticultural therapy (Lewis, 1976). Lewis (1995) stated that

“Over time, there has been varying interest in horticultural therapy by academic horticulture. Programs had been established at a number of universities, only to finally be deleted. While several universities have graduate students in horticultural therapy, only Kansas State University offers a B.S. and a M.S. in horticultural therapy. Four universities offer a B.S. option in horticultural therapy; one community college offers a one-year program, and four community colleges and two universities offer elective horticultural therapy courses. In recent years, Botanic Gardens and Arboreta in the U. S. have filled the gap by offering workshops and courses in the subject” (p 34).

In 2004, Shoemaker (2004) reported that there was one university that offered a Bachelor's degree in horticultural therapy, two that offered a horticultural therapy option within horticulture, and twelve other universities that offered at least one course in horticultural therapy.

According to the American Horticultural Therapy Association (AHTA) (www.ahata.org/education/colleges.cfm, obtained on October 17, 2008), currently there are two universities (Kansas State University and Rutgers University) that offer Bachelor's degrees in horticultural therapy, one university that offers a Bachelor's degree in Landscape Horticulture with a Horticultural Therapy concentration, and 12 colleges and universities that offer at least one course in horticultural therapy. Checking university web sites of those listed on AHTA's web site on March 11, 2009 showed four universities with a horticultural therapy option or concentration as part of their bachelor degree program in horticulture or plant science (Colorado State University, Kansas State University, Rutgers University, and University of Maine – Orono). Currently, there is one university that offers a M.S. degree with an option in horticultural therapy (Kansas State University), one college that offers an Applied Associates degree in horticultural therapy (Oklahoma State University-Oklahoma City), and 6 colleges or universities offering one or more courses in horticultural therapy.

Since the first B.S. degree program in 1972, there have been no other colleges or universities offering a B.S. degree; however, options within horticulture, plant science, or other related disciplines have increased and the number of colleges and universities offering at least one course has increased greatly. Educational opportunities started with a B.S. degree; however, growth has been in degree options and courses offered. Reports of educational opportunities from published papers, conference proceedings, and newsletters are summarized in Table 1 to further demonstrate change, but lack of growth.

The minimal academic requirements in the profession of horticultural therapy, up to the present time, may partly explain the reduction in opportunities to earn degrees in horticultural therapy. The profession of horticultural therapy has not advanced as a licensed occupation as have other therapeutic modalities.

“The development of the profession of horticultural therapy is following a similar path to these other allied therapies (art, music, and therapeutic recreation) although it appears to be moving at a slower pace. The membership, educational requirements and opportunities, and credentialing all lag behind the other comparable professions. The AHTA has significantly less members than the other allied therapy professional associations. Currently, there is no educational requirement for entering the profession, with some entry-level positions requiring a high school diploma and others requiring a Bachelor’s degree. The AHTA does provide a credential, but since it is a voluntary peer review process, it is not a recognized credential in health care” (Shoemaker, 2004, p 174).

In 2008, AHTA began requiring a B. S. degree as one of the criteria for professional registration.

There is limited literature on horticultural therapy instruction. Murphy (1982) suggested that horticultural therapy students be proficient in horticulture, horticultural therapy, and therapy skills prior to graduation. Etheridge and Hemp (1979) stated that, in addition to horticulture, students should have a broad background in vocational education techniques, psychology, sociology, and special education. A technique suggested by Smith (1995) is journalizing - an

activity that allows students to associate their degree of skill with their appraisals of the work they accomplished.

Today, health care in the United States is moving from allopathic medicine to holistic medicine. That is, alternative methods of treatment are being used with traditional methods. Doctors understand there is value to the human-plant connection. Frumkin (2001), a physician in public health, stated that “Contact with the natural world may be directly beneficial to health. If so, then the field of environmental health needs to extend beyond toxicity to consider possible health benefits” (pp 234-235). The indoor environment can contain toxic chemicals found in carpet, window coverings, and furniture. Plants and soil in which they are planted can eliminate toxins. People can, therefore, benefit from healthier surroundings. As the medical profession becomes more aware of this information, doctors may better understand the value plants have in people’s lives. One aspect is horticultural therapy, a program in which plants are used in a therapeutic manner. Dr. Frumkin’s statement may lead the horticultural therapy profession to new heights. As this begins to occur, colleges and universities need to re-evaluate the need to establish horticultural therapy programs within their curriculum once again.

The application of horticulture as a form of therapy is not a recent concept. Watson and Burlingame (1960) stated that “there is a strange and wonderful satisfaction in watching plants grow. Many people have a great desire to know more about plants and their life processes, about their growth and development. The public seems to be avid for this kind of information, and this avidity increases when people are ill or have time on their hands. (Horticulture) is a technique that can be used to supplement the already existing forms of therapy to improve physical and mental well-being” (pp 1-2).

In higher education, it is common for students to start their course of study with an introductory course. Introductory courses can serve several purposes. Williams and Bramwell (1989) suggested there are two main goals for an introductory-level course. The first goal is to develop interest in the subject of study, encourage students to converse with faculty, and seek a mentor. The second goal is to provide students with good entry-level preparation by introducing them to relevant literature and techniques as well as professional concerns. The hope is that students will enjoy their learning experiences and be encouraged to pursue careers in the related profession.

The reduction in horticultural therapy programs offered at colleges and universities in the United States and a renewed interest in the people-plant connection by the medical profession are key reasons I chose to plan and develop an Introduction to Horticultural Therapy course for college students.

YEAR	UNIVERSITY	DEGREE
2001 ^V	Kansas State University Rutgers University, New Brunswick, New Jersey HT Curricula: Arizona State University Colorado State University Edmonds Community College, Lynnwood, Washington Hawkeye Community College, Waterloo, Iowa Kansas State University Merritt College, Oakland, California Metropolitan Community College, Omaha, Nebraska Northern Virginia Community College Oklahoma State University Randolph Community College, Asheboro, North Carolina SUNY Cobleskill, Cobleskill, New York Temple University, Ambler, Pennsylvania Tennessee Technological University Texas A & M University Tulsa Community College, N. E. Campus University of Massachusetts Virginia Polytechnic Institute and State University	B. S., M. S.
2008 ^U	Kansas State University (HT option) Rutgers University School of Environmental & Biological Sciences (HT option) Colorado State University (HT option) University of Maine – Orono (HT concentration) Applied Associate Oklahoma State University, Oklahoma City, Oklahoma HT Certificate Programs, AHTA-Accredited: Central Piedmont Community College, Charlotte, North Carolina Edmonds Community College, Lynnwood, Washington Merritt College, Oakland, California Rutgers University School of Environmental & Biological Sciences Temple University, Ambler, Pennsylvania HT Courses, One semester class or more offered: Cabrillo College, Aptos, California Kansas State University, Division of Continuing Education Murray State University, School of Agriculture, Murray, Kentucky Tennessee Technological University	B. S., M. S. B.S. B. S.

^Z=Lewis, 1996 ^Y=Lewis, 1976 ^X=NCTRH, 1986 ^W=AHTA, 1990 ^V=AHTA, 2001

^U=AHTA, 2008, and confirmed by education institutions

CHAPTER 2 - Methods

During the spring 2008 semester, questionnaires (Appendix A) were sent to horticultural therapy practitioners (13), university professors (11), and university students majoring in horticultural therapy (8), using the AXIO Survey System, an internet-based survey system. Respondents were solicited via email with a link to the questionnaire in the email. The survey was available for 5 weeks and reminder emails were sent 3 times while the survey was available. All responses were anonymous. The names and email addresses of registered horticultural therapy practitioners were obtained from the membership list of the AHTA. Dr. Candice Shoemaker, of Kansas State University's Department of Horticulture, Forestry and Recreation Resources, supplied the names and email addresses of university professors. The professors were asked to provide names and email addresses of students whom they believed would be interested in responding to the survey designed for college and university students. Only one university supplied names. This presents bias in the report, but the students' results are presented. Survey questions for this report were drawn up by the Major Professor and student. Questions for the horticultural therapy practitioners referred to the different therapeutic aspects of their work and challenges they experience in the profession. University professors were asked questions regarding their horticultural therapy curriculum and classes. Practitioners and professors were also asked to prioritize a list of nine possible topics for an introductory horticultural therapy course. College students were asked questions regarding their participation and learning experiences in an introductory-level horticultural therapy course.

The AXIO Survey System automatically tabulated the responses for questions in questionnaires for each group of participants. The results were shown as number of people and percentage of people who answered each question, for example 2(25%) answered “yes” to a question. In question 1 of the Horticultural Therapists’ and University Professors’ questionnaires - “*Prioritize the following subjects from most important to least important for an Introduction to Horticultural Therapy course,*” the rankings were listed from 1 to 9 and N/R for no response. The number and percentage of responses for each rating was shown as the # (%), illustrated above. The nine rankings were reclassified into three rankings by combining responses for rankings 1-3, 4-6, and 7-9 that were then labeled “important”, “somewhat important”, and “not important”, respectively. Topics that were identified as “important” by the respondents were considered to be appropriate for an introductory course while those ranked as “not important” were not appropriate.

In addition to the surveys, a comprehensive review of the literature was conducted. The primary data bases searched were AGRICOLA, CAB Abstracts, Education Full Text, MedlinePlus, ProQuest Dissertations and Theses – Full Text, ERIC, and Web of Science. Google Advanced Search program was also used. The key words used were horticultural therapy, therapeutic horticulture, garden therapy, gardening therapy, horticultural therapy education, horticulture education, introductory courses, and introductory-level courses. A review of introductory textbooks used by other allied health fields, including, music therapy, art therapy, and occupational therapy was done to compare organization of topics and similarity of topics.

CHAPTER 3 - Results

Six (46.1%) horticultural therapy practitioners, 8 (72.7%) university professors, and 7 (87.5%) students responded to the survey. Although the total number of respondents is not large, the response rate was close to 50% or better.

All but one of the universities that the professors were associated with offered an Introduction to Horticultural Therapy course. Four responded that the course was offered every other year, two offered it annually, and one offered it every semester. Enrollment in these courses varied from 3 to 50. All six universities offered the course for three credits, and only two of the universities had a lab component.

Horticultural therapy practitioners and professors agreed that definitions of horticultural therapy are important while program evaluation to determine if health care needs are being met is not important for an introductory course (Table 2). A majority of horticultural therapy practitioners also indicated the history of horticultural therapy and horticultural therapy theories were important topics; program types, health concerns of populations served through horticultural therapy, and settings for horticultural therapy were somewhat important; and client/patient assessment and program evaluation were not important in an introductory course. The professors' responses were not as clearly in agreement as were the practitioners'. A majority of the professors reported that settings for horticultural therapy was a somewhat important topic and they were evenly split between important and not important regarding history of horticultural therapy as a topic in an introductory course. Program planning was somewhat important. The professors showed no trend toward agreement on the remaining topics.

Students were not asked questions regarding course topics. Rather, they were asked questions regarding their major study. All but one of the students was majoring in horticultural therapy and three of the seven that responded had taken or were taking an Introduction to Horticultural Therapy Course. When asked what aspects of the introductory-level horticultural therapy course were of the greatest interest to the students, one person who had taken the course replied the study of the use of adaptive tools available for special needs patients and clients, accessible gardening techniques, and measuring the benefits of horticultural therapy. Also, this student reported that learning how to reach designated horticultural therapy goals that are planned for clients in cognitive, psychosocial, and physical domains is a topic of great interest, as well. Another student, who was most interested in the interaction with special populations, wanted to learn how to help each population and activities to use in horticultural therapy programs. A majority of the students had experiences of observing or working in horticultural therapy environments. When asked what they gained from their experience, students stated they learned that people who may experience the same disability differ in their levels of function. Also, they learned that it is more important to be concerned about how the horticultural therapy process goes rather than the successful completion of the activity. Students also reported that by observing therapists, they learned and gleaned ideas to develop their personal techniques in programs and activities that they would plan.

Table 2 - Horticultural Therapy Practitioners' and University Professors' Responses to a Survey about Prioritizing Subjects for an Introduction to Horticultural Therapy (HT) Course for College Students

Course Topics	HORTICULTURAL THERAPY PRACTITIONERS				HORTICULTURAL THERAPY UNIVERSITY PROFESSORS			
	No. Surveys Sent	No. Surveys Received	No. Responses To Topic	% Topic Inclusion	No. Surveys Sent	No. Surveys Received	No. Responses To Topic	% Topic Inclusion
	13	6			11	8		
History of HT								
Important			4	66.68			4	50.0
Somewhat Important			1	16.67			0	
Not Important			2	33.34			4	50.0
HT Theories								
Important			4	66.68			2	25.0
Somewhat Important			1	16.67			3	37.5
Not Important			1	16.67			3	37.5
Definition of HT								
Important			5	83.34			6	75.0
Somewhat Important			0				0	
Not Important			1	16.67			2	25.0
Program Types: Social, Therapeutic, Vocational								
Important			1	16.67			3	37.5
Somewhat Important			4	66.68			3	37.5
Not Important			1	16.67			2	25.0
Health Concerns of Populations Served Through HT								
Important			1	16.67			3	37.5
Somewhat Important			4	66.68			2	25.0
Not Important			1	16.67			3	37.5
Settings for HT								
Important			0				2	25.0
Somewhat Important			5	83.34			6	75.0
Not Important			1	16.67			0	
Client/Patient Assessment								
Important			1	16.67			2	25.0
Somewhat Important			1	16.67			3	37.5
Not Important			4	66.68			3	37.5
Program Planning (Setting Program/Treatment Goals, Objectives, Plans)								
Important			2	33.34			2	25.0
Somewhat Important			1	16.67			4	50.0
Not Important			3	50.0			2	25.0
Program Evaluation								
Important			0				1	12.5
Somewhat Important			2	33.34			1	12.5
Not Important			4	66.68			6	75.0

CHAPTER 4 - Discussion

Although the number of surveys sent to horticultural therapists, university professors, and college students was small, the responses were helpful in identifying topics that need to be taught in an introductory-level horticultural therapy course. There are reasons why the numbers were low.

There are few colleges and universities in the United States that offer degree programs of study in horticultural therapy. Therefore, the number of college and university professors who teach horticultural therapy courses is limited.

Results of a literature search found no current articles on horticultural therapy education. The availability of literature dating back to the 1970s was limited, as well. However, articles and papers that were located were very informative and helpful for the purpose of this report.

There are several suggestions for courses to be considered by students who major in horticultural therapy. Horticultural therapy students should have a broad background in horticulture and vocational education techniques. Students should study psychology, sociology, and special education (Ethridge and Hemp, 1979). Also, three areas in which horticultural therapy students need to be proficient prior to graduation are horticulture, horticultural therapy, and therapy skills (Murphy, 1982). It was also pointed out in Murphy's study of 1982 that participants in Murphy's study who had horticultural therapy degrees made "higher mean scores for the horticulture and therapy skills domain-referenced exams than participants with horticulture or other degrees, respectively. Participants with degrees in horticulture and horticultural therapy scored similarly on the horticultural therapy domain test. This indicates a

need for professional training of individuals working in horticultural therapy” (Murphy, 1982, p 15).

A growing need for horticultural therapists is found in the area of elders’ health care. This segment of society, which has many health concerns, is growing rapidly. Simson and Haller (1997) reported that horticultural therapists are challenged by adapting and applying horticultural therapy concepts and skills to the needs of the older population. Also, horticultural therapists are more effective when working with older adults when they have attended courses and experienced practice in the area of gerontology (Simson and Haller, 1997). A majority of horticultural therapists who responded to a survey by Simson and Haller (1997) reported that horticultural therapy studies should include the study of gerontology.

In 1979, a study was conducted for the purpose of developing a curriculum for a horticultural therapy program through which persons interested in becoming horticultural therapists would be trained (Taylor, Thompson, and Douglas, 1979). At the time, there were no horticultural therapy programs available in Washington, the state in which the study was conducted. The conclusion indicated there was a growing need for trained personnel in the field of horticultural therapy. A one-year certificate program in horticultural therapy was established, requiring 45 credits. The Introduction to Horticultural Therapy course was 4 credit hours. Topics of study included history of horticultural therapy, horticultural therapy programs today, horticultural therapy programs for specific handicapping conditions (hospitalized patients, emotionally disturbed, behaviorally disturbed, mentally retarded, physically impaired), and adaptive equipment and materials.

The survey for this report asked the horticultural therapists about the most challenging aspects of their work. Also, university professors were asked if there might be other topics to

consider when planning an Introduction to Horticultural Therapy course. Their responses are outlined in Table 3.

Table 3 – Horticultural Therapy Practitioners’ and Professors’ Comments from the Survey

Horticultural Therapy Practitioners’ Challenges in Their Profession	College and University Professors’ Suggestions for Additional Topics
“Hard data that backs up the claim that HT is therapeutic. Professional journal (is not) anecdotal data.”	“Other therapies that are common to many facilities, e.g. occupational therapy, physical therapy, recreational therapy, plus other professionals we interact with who are likely to be in facilities, e.g. housekeeping, building and grounds, volunteers.”
“Adapting consumer goal-oriented programming to meet consumer needs based on changes within clinical settings and within conjunction with other disciplines at the facility.”	“Site visits to existing programs”
“Helping management and other health care professionals realize the potential impact of HT with their client group and within the facility.”	“Employment opportunities”
“Interagency communication”	“Accessibility issues” (accessible gardening techniques and adaptable tools and materials)
“Currently, it is balancing the demands between the horticultural responsibilities and the therapist responsibilities. I am only 1 person managing a large program in a skilled nursing home. Overall, I would say that in all positions I have held it is a balancing act between the people side and plant side that is the most challenging.”	"Professional registration"
“Following from referring clinicians and resident staff.”	“Funding/planning administrative support”
	“Looking at the holistic approach to the body”
	“Gardening and activities”

The information shared by the horticultural therapists and professors was very helpful for planning an introductory-level course in horticultural therapy. The students' comments, as noted in the Results were also helpful.

A competency-based, or performance-based, curriculum is often utilized in courses that prepare students for specialized vocations. The objective in designing a course of this type

“is to identify the ultimate roles, or performances, for which the student is being educated and build the course around those. This ‘competency-based’ structure attempts to develop competent performance in the specified role. Once defined, these roles must be analyzed to determine what knowledge, skills, attributes and dispositions students will need to acquire in order to perform them. Knowledge and skills are then sequenced from the most elementary, prerequisite ones to the more complex, sophisticated final performances.”
(Toohey, 1999, p 93).

An introductory-type course provides the students with elementary knowledge and skills. It is one that briefly introduces most, if not all, topics that will be studied in depth in more advanced courses. An instructor, who is designing an introductory-level course for specialized vocations such as horticultural therapy, may ascertain that this elementary course has a competency-based curriculum. The course should be designed in such a way that interests students and encourages them to continue their studies in the program. When planning a course, it is important to consider the concerns and interests of practitioners and course instructors who are working in the field and preparing students for their future careers.

A learning tool that may be effective in horticultural therapy instruction is journalizing. Smith (1995) stated that writing journal entries allows a student to associate his or her degree of skill with an appraisal of the work completed. Students are able to view their clinical experiences as learning opportunities. Journalizing incorporates emotional with cognition (and possibly applied) learning experiences. Smith (1995) conducted a survey, in which students stated that journalizing helped them to get in touch with their feelings and to evaluate themselves as professionals. Also, they were better able to understand the relationship between horticultural therapy theories and experiences in the clinic setting.

The proposed course syllabus and course schedule for an introductory course in horticultural therapy are in Appendix B and C, respectfully. The syllabus contains the course description, student performance objectives, course outline, and evaluation procedures. The course schedule contains a 16-week plan, two classes per week and a lab. The lab is an important element of the course, as it gives students opportunities to apply knowledge gleaned from the two weekly classes – experiences that will meld new information into long-term memory. Actual horticultural therapy experiences will help students discover if this vocation is one in which they will find pleasure and satisfaction.

The introductory-level horticultural therapy course topics were planned in accordance with the results of the survey sent to horticultural therapists, university horticultural therapy professors, and students. Each group of participants offered information, suggestions, and concerns that were utilized in the selection. The introductory course topics, listed in Appendix B – Course Syllabus, will provide students with an indication of subjects that may be taught in advanced horticultural therapy courses. A brief description of the key topics and the importance of their study follow.

Horticultural therapy definitions provide a better understanding of the meaning and purpose of horticultural therapy. Students need to focus on this topic, as they learn new terms throughout the course.

The **history** through which horticultural therapy developed is very interesting and meaningful. Watson and Burlingame (1960), Lewis (1996), and Simson and Straus (1998) wrote about its early use in the United States during World War I. Wounded soldiers were patients who received this specialized form of treatment. By gaining a historical perspective of horticultural therapy, students will have a basis for understanding the current status and issues within the profession and seek ways in which to help improve horticultural therapy's status in healthcare.

The following bold-printed terms were taken from Simson and Straus, 1996.

Horticultural therapy background theories (overload and arousal, learning, and evolution) and their connection to the plant-people relationship are essential for study. The overload and arousal theories state that people who dwell in the presence of noise and confusion may experience psychological and physiological excitement that causes harmful stress levels. Research has demonstrated that the presence of plants in people's habitats reduce arousal and stress. The learning theory suggests that people's responses to and preferences for certain types of scenery, landscapes, or plants, result from early learning experiences in the environments and cultures in which they were raised. However, the shortcoming of this theory lies in the fact that it doesn't consider similar preferences of people from different geographic locations or cultures. The evolution theory maintains that mankind has been exposed to vegetative environments and depended on plants for survival since the beginning of time. People experience healthful psychological and physiological changes, as reduction in stress and blood pressure, when they

are in the presence of nature and plants. These are not learned responses, but are those that occur naturally. These theories explain reasons why people derive improvements in their quality of life and why using plants in a treatment modality as horticultural therapy is so important. Evidence of resulting mental and physical benefits enables the horticultural therapy profession to support its position in the medical arena (pp 22-23).

A study of **program types** (vocational, therapeutic, and social) leads the study of horticultural therapy through the different pathways a horticultural therapist may go: They may work with clients who are incarcerated and those with special needs who can learn gardening techniques that lead to new vocations (p 45); patients in physical rehabilitation and those recovering from debilitating illnesses may gain strength from horticultural therapy activities prescribed by doctors and planned by horticultural therapists (pp 54-55); elders may enjoy social interaction during group horticultural therapy programs in retirement centers, assisted living, nursing homes, and adult day care centers (p 62). Students will learn that opportunities for service in horticultural therapy are quite varied and meaningful.

The study of program types leads directly to the client populations who are recipients of a purposeful form of therapy. This topic flows into the study of horticultural therapy settings, wherein horticultural therapy activities take place. These are as varied as horticultural therapy programs and clients. Students will discover that horticultural therapy offers many choices, one that suits each one's interest and purpose.

Students will learn about the many adaptive tools and materials that are designed for special needs and ways in which the tools are used.

Gardening techniques and activities designed for each type of client will be studied.

Students will be given opportunities in labs and actual horticultural therapy activities to apply their knowledge gained during the classes. It is for this reason that successful competencies in all horticultural therapy topics of study are important. By having a well-planned horticultural therapy course curriculum, students will have many opportunities to learn and apply their knowledge.

It is very important for students to become familiar with the study of horticultural therapy. Some students may decide to continue their studies in horticultural therapy, while others contemplate the possibility. It is hopeful that the design of the topics for the course would be informative and students would be encouraged to enter this very important practice that serves people with special needs.

The suggested textbook for the Introduction to Horticultural Therapy course is *Horticulture as Therapy: Principles and Practice*, edited by Simson and Straus (1998). The book contains many topics, including all of the topics suggested for an introductory-level course. It may be very useful as a reference book for advanced horticultural therapy students as well as practicing horticultural therapists.

A suggested basic reading list for the course is included in Appendix D. Each source contains information regarding one or more of the topics listed for the horticultural therapy course. In most cases, the sources are based on research in their respective area of interest.

CHAPTER 5 - Conclusion

Literature regarding horticultural therapy indicates that there has been a gradual decline in education opportunities over the past 25 years. The profession has not reached its full potential as other allied therapies have. Until 2008, a degree in horticultural therapy was not required for professional registration by the American Horticultural Therapy Association. Currently, a B.S. is required, which may infer that horticultural therapy may begin to be recognized as a beneficial method of treatment and utilized by more healthcare agencies in the near future. Because of this, educators may need to re-evaluate their position and provide educational programs for students interested in studying horticultural therapy.

Several educators referred to in this report made suggestions of topics for study in horticultural therapy that included horticulture, vocational education techniques, psychology, sociology, and special education. Journalizing was recommended as a teaching technique in horticultural therapy that helps students to identify their skills developed in the course work they have completed.

The survey conducted for the purpose of learning what topics to include in an introductory-level horticultural course consisted of three questionnaires designed for horticultural therapy practitioners, university professors who teach horticultural therapy, and students of horticultural therapy. The results provided the topics of greatest interest and need for inclusion in an introductory course. These topics included horticultural therapy history, theories, definitions, people-plant relationship, programs, clients/patients, settings, adaptive tools and materials, and adaptive gardening techniques. Students reported interest in learning how to help the various populations served through horticultural therapy and activities to use in horticultural

therapy programs. Also, they stated that they learned ways in which to develop their own techniques in programs and activities by observing horticultural therapists at work. Taking these factors into account, a proposed course was planned and is included in this report. Students will have several opportunities throughout the semester to apply the knowledge they gain in class during the labs, both in mock activities and actual horticultural therapy sessions in which they may volunteer to help the horticultural therapists.

Research evidence is beginning to provide support for the importance of horticultural therapy and its many benefits. Also, there is no question that professionally-trained horticultural therapists are best in carrying out the responsibilities of this service field. It is important that horticultural therapy organizations recognize this need as certification standards and programs are established for their members. Future research regarding horticultural therapy education and its current requirements is essential for today's renewed interest in alternative holistic medicine.

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Appendix A - Questionnaires

QUESTIONNAIRE FOR PRACTITIONERS

1. Prioritize the following subjects from most important to least important for an

Introduction to Horticultural Therapy course:

_____ History of horticultural therapy

_____ Theories of horticultural therapy

_____ Definition of horticultural therapy

_____ Program types of horticultural therapy (e.g. social, therapeutic, and vocational)

_____ Health concerns of populations served through horticultural therapy

_____ Settings for horticultural therapy

_____ Client or patient assessment

_____ Program planning (setting program/treatment goals, objectives, plans)

_____ Program evaluation

2. Are you currently working in horticultural therapy? _____ Yes _____ No

If Yes:

3. What is the most challenging aspect of your work as a Horticultural Therapist?

4. Explain one program you offer and list the main objectives

5. How have you learned about horticultural therapy? Please check all that apply.

_____ College or university courses

_____ Non-university horticultural therapy certificate programs

_____ Master Gardener or Garden Club training

_____ Self-taught

_____ Public garden programs

_____ Other _____

QUESTIONNAIRE FOR UNIVERSITY PROFESSORS

1. Prioritize the following subjects from most important to least important for an Introduction to Horticultural Therapy course:

_____ History of horticultural therapy

_____ Theories of horticultural therapy

_____ Definition of horticultural therapy

_____ Program types of horticultural therapy (e.g. social, therapeutic, and vocational)

_____ Health concerns of populations served through horticultural therapy

_____ Settings for horticultural therapy

_____ Client or patient assessment

_____ Program planning (setting program/treatment goals, objectives, plans)

_____ Program evaluation

2. Are there subjects not on this list that you think are important? If so, please list them:

3. Is there an Introduction to Horticultural Therapy course at your institution of learning?

_____ Yes _____ No

If Yes:

4. What is the name of the course?

5. What is the average enrollment of the course?

6. How often is the course offered?

7. How many credits are awarded?

8. Is there a lab component? _____ Yes _____ No

9. Who takes the course? Mark all that apply:

_____ Students majoring in horticultural therapy

_____ Students majoring in horticulture

_____ Non-major students

10. Is it a service course for your department? _____ Yes _____ No

11. Would you be willing to share a copy of your syllabus? If so, please send it to
my e-mail address.

QUESTIONNAIRE FOR COLLEGE STUDENTS

1. What is your major?
2. Have you taken or are you presently taking an Introduction to Horticultural Therapy course? _____ Yes _____ No

If Yes:

3. What aspects of the course were or are of the greatest interest to you?
4. In what capacity have you experienced horticultural therapy settings or programs?
_____ Not at all
_____ Work
_____ Observe
_____ Volunteer
5. What did you gain from these experiences?

Appendix B - Course Syllabus

Course Description: Introduction to Horticultural Therapy, 3 credit hours, 2 hours lecture, and 2 hours lab each week, 16 weeks. This course will provide an overview of topics that describe horticultural therapy, its historical development, theories, definitions, program types, populations served through horticultural therapy, and its settings. You will learn about adaptive garden tools and materials, accessible garden techniques, and garden activities available for horticultural therapy clients and patients.

Student Performance Objectives: Upon successful completion of this course, you should be able to:

- Explain the historical importance of horticultural therapy.
(Long term application in health care; why less recognition today while focusing on how to advance HT?)
- Describe the horticultural therapy theories (overload and arousal, learning, and evolution) and their application to the people-plant relationship.
- Define ‘horticultural therapy’ and other related concepts.
- Describe program types: vocational, therapeutic, and social.
- Describe the various populations of horticultural therapy clients and patients.
- Describe the settings in which horticultural therapy activities are presented.
- Identify adaptive tools and materials and their uses.
- Understand accessible garden techniques and activities.
- Plan a horticultural therapy activity, identify its population of interest, and describe gardening techniques.

- Write in a journal throughout the semester; include learning experiences, ideas, interests in course materials, for example. The journals will be checked by the instructor periodically throughout the semester.

Course Outline:

PART ONE: Development of Horticultural Therapy and Its Significance

History of Horticultural Therapy

Horticultural Therapy Theories

People-Plant Relationship

Horticultural Therapy and Related Definitions

Horticultural Therapy Programs: Vocational, Therapeutic, Social

PART TWO: Client/Patient Groups Served by Horticultural Therapy

Stroke, Spinal Cord, and Physical Disabilities

Traumatic Brain Injury

Developmental Disabilities

Mental Illness

Children and Youth

Older Persons

Substance Abuse, Offender Rehabilitation

PART THREE: Horticultural Therapy Settings

Outside Space and Adaptive Gardening: Design, Techniques, Tools,

Safety Precautions

Indoor Space and Adaptive Gardening: Design, Techniques, Tools,

Safety Precautions

Botanical Garden Horticultural Therapy Programs

Course Evaluation Procedures:

Based on a percentage of total points available:

90% to 100% = A

80% to 89% = B

70% to 79% = C

60% to 69% = D

Below 60% = F

Assessment will include exams, quizzes and assignments. Extra credit (5 points) may be earned by volunteering to assist horticultural therapists in their programs' activities. Credit will be awarded when signatures of horticultural therapists are submitted to the course instructor.

Students will record their learning experiences, interests, thoughts, and ideas in a journal throughout the semester. This activity will enhance your learning experiences.

Text and Reference Material:

Simson, Sharon Pastor and Martha C. Straus (Editors) 1998, Horticulture as Therapy: Principles and Practice. Haworth Press, Inc., Binghamton, NY.

Appendix C - Course Schedule

- Indicates times when quizzes and exams are scheduled.

	<u>TOPICS</u>	<u>ASSIGNMENTS</u>	<u>QUIZZES</u>	<u>EXAMS</u>
<u>WEEK 1</u>				
Class #1	Course introduction and History of HT	Read Chapters 1 and 2.		
Class #2	HT Theories		●	
Lab	Field Trip to HT Program			
<u>WEEK 2</u>				
Class #1	People-Plant Relationship	Read Chapter 3. Write an essay re how people connect to plants. In what ways is this connection important? Assignment is due Class #1, Week 3.	●	
Class #2	HT Definitions	Complete Definitions assignment sheet.		
Lab	<ul style="list-style-type: none"> ▪ Evaluate your physical and mental state prior to lab. A horticulture activity will follow. You will then re-evaluate your physical and mental state. ▪ The class will divide into 3 groups for next week's lab activity. Groups will select one of the three HT program types and will meet outside of class to plan a mock program activity for their respective program type. 			

	<u>TOPICS</u>	<u>ASSIGNMENTS</u>	<u>QUIZZES</u>	<u>EXAMS</u>
<u>WEEK 3</u>				
Class #1	HT Programs: Vocational, Social, Therapeutic	People-Plant Relationship essays are due today. Select one program type and write an essay. Use at least 1 outside source of information for essay, due Class #1, Week 4.	•	
Class #2	Review Chapters 1 and 2.			
Lab	<ul style="list-style-type: none"> ▪ Group Mock Program Presentations ▪ For Week 4 lab, select a horticulture activity for one of the client groups in Chapter 4 and demonstrate or explain it to class in lab Week 4. 			
<u>WEEK 4</u>				
Class #1	Exam – Chapters 1 and 2	HT Program essays are due today. Read Chapter 4.		•
Class #2	Stroke, Spinal Cord, Physical Disability	Read Chapter 5. Select 1 source in Chapter 4 Bibliography and write an essay, due Class #2, Week 5.		
Lab	Individual Client Group presentations from Chapter 4			

	<u>TOPICS</u>	<u>ASSIGNMENTS</u>	<u>QUIZZES</u>	<u>EXAMS</u>
<u>WEEK 5</u>				
Class #1	Traumatic Brain Injury (TBI)		•	
Class #2	Guest Horticultural Therapist Lecture re TBIs	Chapter 4 Bibliography essay is due today. Write reaction paper to lecture, due Class #1, Week 6.		
Lab	Discuss challenges horticultural therapists may have with TBI patients based on Chapter 5 And Guest Lecturer.			
<u>WEEK 6</u>				
Class #1	Review Chapters 4 and 5.	TBI Lecture Reaction paper is due today.	•	
Class #2	Exam Chapters 4 and 5	Read Chapter 6.		•
Lab	Opportunity to volunteer for extra credit in HT activity			
<u>WEEK 7</u>				
Class #1	Developmental Disabilities	Select 1 source in References, Chapter 6 and write an essay. Refer to text to include relative information about benefits of HT and the different client populations. Essay is due Class #2, Week 8.		

	<u>TOPICS</u>	<u>ASSIGNMENTS</u>	<u>QUIZZES</u>	<u>EXAMS</u>
<u>WEEK 7</u> (Cont'd.)				
Class #2	Guest Horticultural Therapist Lecture re Developmental Disabilities	Write reaction paper to lecture, due Class #2, Week 8. Read Chapter 7 very carefully and thoroughly to prepare for writing essay next week.		
Lab	Field trip to assist horticultural therapist in HT activities with developmentally disabled clients.			
<u>WEEK 8</u>				
Class #1	Mental Illness	Research Chapter 7. Write a paper on what you think are the most important aspects of the chapter. Consider the horticultural therapists' approach to treatments. Paper is due Class #2, Week 9.	•	
Class #2	Guest Horticultural Therapist Lecture re Mental Illness	Developmental Disability Reaction paper is due today. Chapter 6 Developmental Disability Reference paper is also due today. Write a reaction paper to lecture, due Class #2, Week 9.		
Lab	Discuss ways in which various horticultural therapy activities may help mental patients. What type of activities would you use in programs for this population?			

	<u>TOPICS</u>	<u>ASSIGNMENTS</u>	<u>QUIZZES</u>	<u>EXAMS</u>
<u>WEEK 9</u>				
Class #1	Review Chapters 6 and 7.		•	
Class #2	Exam Chapters 6 and 7	Chapter 7 Research Paper re Mental Illness is due today. Read Chapter 8 carefully and thoroughly for group discussions.		•
Lab	Opportunity to volunteer in HT activity for extra credit			
<u>WEEK 10</u>				
Class #1	Children and Youth Class will divide into groups for discussions.	Group discussions re purposes and benefits of horticulture in lives of children and youth as stated in Chapter 8.		
Class #2	Class discussion on Erik Erikson's Psychosocial Theory-The Eight Stages of Man (Page 204 in text) and other sources of information regarding this theory. Discuss occurrences in children when disturbances occur during their developmental years.	Read Chapter 9 carefully and thoroughly.		

TOPICS**ASSIGNMENTS****QUIZZES****EXAMS****WEEK 10**

(Cont'd)

- Lab
- Field trip to children's community/school garden. Work with children in their horticulture activities.
 - Class members will structure HT activity for older adults experiencing one of the diseases/impairments described in Chapter 9 and explain and demonstrate it in lab, Week 11. This is an individual student activity.

WEEK 11

- Class #1 Older Persons Group discussions re life challenges that older adults experience. In what ways does horticulture help them?
- Class #2 Guest Horticultural Therapist
Lecture re Older Persons Write Older Persons Lecture Reaction paper, due Class #1, Week 12.
- Lab Student presentations of horticulture activities for Older Persons

WEEK 12

- Class #1 Review of Chapters 8 and 9 Older Person Lecture Reaction is paper due today. Complete Definitions Assignment sheet, due Class #2, Week 12. ●
- Class #2 Exam Chapters 8 and 9 Read Chapter 10 carefully and thoroughly. ●

TOPIC

ASSIGNMENTS

QUIZZES

EXAMS

WEEK 12
(Cont'd)

Lab Opportunity to volunteer for extra credit in HT activity

WEEK 13

Class #1 Substance Abuse and Offender Rehabilitation

Class discussion today re problems that prisoners must endure, HT activities that may be applied with this population, and vocational opportunities horticulture offer them.

Complete Definitions Assignment Sheet, due Class #2, Week 13.

Class #2 Guest Horticultural Therapist
Lecture re Substance and Offender

Write Substance Abuse and Offender Rehabilitation Reaction paper, Class #1, Week 14. Definitions Assignment Sheet is due today.
Read Chapters 11 and 12.

Lab

- Discuss problems and obstacles that horticultural therapists may experience while working with this population. Also, what horticulture activities will help the offenders face day-to-day problems?
- Divide into groups for next week's lab for the purpose of demonstrating and explaining an indoor HT activity. Groups meet outside class to plan their activity and gather supplies. Any items you may have at home are quite acceptable for use in this activity.

	<u>TOPICS</u>	<u>ASSIGNMENTS</u>	<u>QUIZZES</u>	<u>EXAMS</u>
<u>WEEK 14</u>				
Class #1	Outside Space and Adaptive Gardening: design, techniques, tools, and safety precautions.	Group discussions re outside space and adaptive gardening tools. Consider garden design, raised Beds, container gardening, adaptive tools, and legal issues. Write a paper describing the attributes and problems associated with ground-level and raised bed gardening (Chapter 11). Use textbook and at least 1 outside source of information. Paper is due Class #1, Week 15.	●	
Class #2	Inside Space and Adaptive Gardening: design, techniques, tools, and safety precautions.	Group discussions re inside space and adaptive gardening today. Consider various work areas, growing spaces, adaptive tools and equipment, safety factors, and accessibility issues. Select 1 source from References, Chapter 12 and write an essay. Paper is due Class #2, Week 15. For what reasons did you select your respective source? Why is the topic important to HT? Read Chapter 13.	●	
Lab	Group presentations of indoor HT activities			

	<u>TOPICS</u>	<u>ASSIGNMENTS</u>	<u>QUIZZES</u>	<u>EXAMS</u>
<u>WEEK 15</u>				
Class #1	Botanical Gardening: Design, techniques, tools	Class discussion today re botanical and arboreta and their place and importance in profession of HT	•	
Class #2	Review of Chapters 10, 11, and 12			
Lab	Field trip to botanical garden or arboretum			
<u>WEEK 16</u>				
Class #1	Review of Chapters 10, 11, and 12			
Class #2	Final Exam (Chapters 10, 11, and 12)	HAVE A GREAT SEMESTER BREAK!		•

Appendix D - Suggested Reading and Reference List

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Ulrich, Roger S. "Visual Landscapes and Psychological Well-Being." *Landscape Research*. Volume 4 (1) 1979, pp. 17-23. ISSN: 0142-6397.