

# Teaching beyond Formal Education: Creation of Specialized Programs



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## Abstract

This paper examines the importance of continued learning through industry certification programs from three points of view: (1) faculty, (2) students, and (3) the horticultural industry. Faculty members can avail themselves of these educational and service opportunities by providing their expertise to continue learning beyond formal education. Certification programs are very important to the horticultural industry in order to update the actively involved personnel. Changes in the practices in the industry bring about the need for changes in training materials, of which some are now approaching being outdated. Further, these training materials should be in the context of the adult learners' experiences. Research shows that involvement in updating manuals and providing review sessions for certification candidates in the context of the candidates' experience has improved their passing percentages. While this article is written for faculty involved in horticultural education, the principles and techniques can be applied to any curricula in technical education.

## Introduction

Learning does not cease after graduation from schools of higher education, both for the faculty and the students (Grabowski, 1981) and neither is learning after graduation a passing fad (Charner and Rolzinski, 1987). Horticultural faculty often forgets this fact with their pressing teaching loads and budget restrictions. It is necessary as an educator to know how the methods of learning differ between non-traditional and traditional students in order to be successful when teaching outside the classroom environment (Brookfield, 1997). For example, for those people who are presently changing careers due to down sizing of companies, loss of employment or for personal reasons, there is a growing demand for adult education programs. These adult learners may not desire another college degree, but want specific technical training to seek different employment. Their needs may be as simple as specific seminars or as extensive as a certification in their new field of endeavor.

All areas of education and technical industries may not have as unique a history as the horticultural

industry. Even today, the public (and educators) views the horticultural industry as having sometimes an unethical reputation. To illuminate this point further, a brief history is presented. Historically, until recently there has been little formal training of members of this industry (Davidson et al., 2000; Hedreck, 1988; Steward, 2001). Many were self-taught and information or mis-information was passed down from generation to generation (Davidson et al., 2000; Hedreck, 1988; Steward, 2001). Sales representatives were often unethical and willing to tell a client anything to sell a plant. Plants, which have become invasive weeds, were touted as the end-all, be-all plant materials for the landscape (Davidson et al., 2000; Hedreck, 1988; Steward, 2001).

For the horticulture industry in the United States to overcome past unprofessional actions, the implementation of technical education curricula, adult education and professional certification programs are methods to ensure proper care for horticultural plant needs and respect in the business community. Certification is not a "cure-all" as there will always be those persons who refuse to change. However, because of the great number of plants, the specific practices for each species involved and changes discovered through research, the need for professional training and continued learning is a requirement for success (Green, 2002). Other traditional agriculture industries have developed certification programs that do not have the diversity found in certification programs of the horticultural field (Dr. David Munn, Associate Professor of Soils and Natural Resources, The Ohio State University, personal interview 2002).

Prior to adult education seminars and certification programs, even nursery catalogues, were difficult to read and were generally published without any consideration for where the nursery's market might be located. Common names were colloquial and limited in scope (Hedreck, 1988; Steward, 2001) and scientific nomenclature was almost non-existent. Now, the use of proper scientific nomenclature, accurate descriptions of plant materials and their landscape performances are now standard practices for all reputable nurseries. Much of this has to do with the recent cooperation of the

academicians and the industry beyond the formal classroom (Steward, 2001). An academicians training the next generation of leaders and workers can receive much benefit personally and in their teaching programs by involving themselves in adult education activities.

### **Benefits to the Instructor**

Involvement of university faculty in adult education through certification programs, workshops, seminars, and other means of direct connections with members of the industry keeps the faculty current with industry practices and additionally with teaching practices appropriate for serving adults (Grabowski et. al., 1981; Merriam and Caffarella, 1991). Often educators with heavy teaching schedules are unaware of the most current practices or research within the industry. Further, certification programs and workshops provide interaction between education and industry and provide the opportunity to provide research-based information to all involved.

The development of adult education programs between the university and the industry also allows faculty members to expand their educational resources beyond the textbook. This is accomplished by providing a resource from which the faculty member can draw guest industry speakers to add an element of real life to the classroom situation. Teaching of adult sessions in preparation for certification tests allows the faculty member to hone their skills in teaching the non-traditional student. Non-traditional students have generally very different goals than traditional students. However, teaching must be done in a method that fits into the context of their employment situation (Charner and Rolzinski, 1987). They may not accept an academic viewpoint as totally factual and will challenge the faculty to prove what is being taught has validity (Merriam, 1991). With each group, the learning environment changes, challenging faculty to provide the required educational context and content for adult education.

### **Benefits to the Industry**

Employees who become certified have an increased level of knowledge, which directly impacts the relationship between the company and their clients. Knowledgeable employees reflect positively on the company, which in turn can improve the image of the entire industry to the public in general (Green, 2002).

Since the horticultural industry is made up primarily of small companies which do not have the benefit of having their own research facilities, they are more dependent upon the academic world to keep them up to date on current industry practices and research (Charner and Rolzinski, 1987; Steward,

1996). The industry members also interact with each other to develop business relationships that they may not have been able to do before (Steward, 1996). The industry members become more able to compete equally on a more level playing field. These employees, who are stewards for their clients and their land, need the knowledge to do their job correctly and in an environmentally proper manner. Overall certification programs improve the industry through improving the reputation, image, ethics, and professionalism for those involved in the industry (Green, 2002). These can be accomplished through cooperative efforts of both academia and the industry.

### **Benefits to the Traditional Student**

Certification programs build upon the formal education of technical and vocational schools. However, as with any trade not everyone professing to be a tradesman avails himself or herself to the formal training. In the classroom, faculty are only able to teach the basics. Certification programs require application of the basics in a real world situation. These types of programs widen the traditional student's training and expertise in a field where they have formal education. For example, in a typical plant identification course, the students tend to concentrate on how to identify the plants more than they learn proper use of the plant material. By testing for certification, students are not only tested on the identification of plants, but also the plant environmental needs. This is not to denigrate plant identification courses. These courses are an invaluable backbone of the horticulturist's education. Since certification involves more than simply identification, the student can take what they have learned in class and apply it in a real world situation. They have been forced to think critically, many for the first time in their lives. This "capstone" approach is often what is missing from the formal education. Implementation of certification programs fills this void.

Further the pursuit of certification develops the students as well as the industry employees into leaders in the industry. Certification demonstrates initiative. It also rewards the employees for learning experiences they have as part of their employment and extending themselves to a higher level of cognitive learning and performance (Merriman, 1991). Further most certification tests are very difficult to pass the first time. The process of obtaining the certificate means the employee has researched and reviewed everything required to be able to pass the test. This is done through self-learning strategies and cognitive learning sessions with faculty (Merriman, 1991). Many times it also reinforces the employees' beliefs and experience. (Merriman, 1991,2001)

## Methods for Accomplishment

In the most recent study of available certification programs, forty-four out of the fifty states have a basic or core certification program with ornamental horticulture (Steward, 1996). Very few states have advanced and/or separate certifications for the various disciplines of horticulture, for example nursery, landscape, interiorscape, or garden center (Steward, 1996). Programs include basic botany, insects and diseases, woody and herbaceous plants, plant nutrition, soils, weeds, turf, landscape design, landscape installation and maintenance, laws and standards, pruning, salesmanship, nomenclature, display selling, indoor foliage, pesticides, fruit and vegetable garden production, and plant propagation. Typically there is also a section on ethics as well (Steward, 2001). The core certification tests tend to be very general and at times very basic.

This may seem like a complete listing of everything one needs to know in a horticulture certification program. Despite the apparent thoroughness of the program, there are many areas within horticulture that require specialized knowledge in order to be successful. There little testing done on nursery production, landscape contracts, professionalism, customer relations, environmental factors, safety and first aid, or greenhouse production. These specialized areas require more complete and in-depth knowledge. Of the 44 states with a core exam, as of 1994, only 4 states had additional certification programs. (Steward, 1996) Further, there is an increasing nationwide trend towards certifying individuals in horticulture. Laws now often require certification to perform certain work. In many areas, to work on any government project, the employees must have certification (Anonymous, 2002). Consequently, many opportunities exist for horticulture faculty to become involved.

The first step in the updating or creation of an advanced or specialized certification program is to contact the national or state organizations that provide the core certification programs. They will also have the contact information for state and local agencies that faculty should contact, and with which to get involved. Once the correct agencies are contacted, the faculty member can volunteer to become involved in any currently operating certification programs, for example by being a judge, a test grader, or to update sections of training manuals to thoroughly review the current practices. Faculty can develop a dialog with the appropriate education and certification committees and volunteer time, energy and knowledge. Finding people who are willing to commit the time and energy needed to improve or

assist with state certification programs is difficult. As a volunteer, the faculty member generally will not be required to update the entire program, but may only need to be involved in the area of their expertise. One can become involved as a tutor in training and review sessions for those certification candidates having difficulty with certain sections of the exam.

Even extensive programs already in existence all need to be updated on a regular basis. Many current programs are over ten years old and the industry has changed dramatically. Pruning is a classic example. Tree paint, flush cuts, staking, and wrapping are all

**Table 1. Plant Sensitivity Passing Percentages<sup>1</sup>**

Year	2000	2000	2001	2001	2002	2002
Type of Testers	First time	Retake	First time	Retake	First time	Retake
Ohio	19%	8%	37%	38%	46%	36%
Nationally	44%	27%	55%	41%	NA	NA

<sup>1</sup>Data from personal interview with Ms. Jill Sayers, Ohio ALCA Test Administrator

examples of techniques that are no longer recommended practices that are still in the certification manuals (Steward, 1996). The industry needs to keep current with research, educators need to keep current with industry and certification programs should keep current with everyone. Thus, even if there are programs already in place, work to ensure the application of knowledge is the most up to date and current it can be.

Development of one such training program done by the author is demonstrated in the data portion of this paper. The author was approached to assist with a section known as "Plant Sensitivity" which had a very low passing rate. A manual of material was developed with consideration of the adult learner's situation and capabilities. It was written with the plant material as a list under only a single classification or grouping and in terms in which the testers were familiar and in a cognitive context of the adult learner. The manuals were then used in three to four hour review and study sessions, which included viewing the plants involved under growing conditions. While test was not administered on the same day as review/study session (except in one case) passing of this section did increase over the non-attendees. Additionally, the test questions were rewritten to fit the study guide and in terms commonly used by the industry. This did not mean that they were over simplified but put into the standard language of the horticultural industry.

## Data

Sparse data is available as to results from academia becoming involved in preparation of certification programs. When Ohio first developed a Certified Landscape Technician program in 1999, the training



materials were based on national materials from Associated Landscape Contractors of America. One particular section "Plant Sensitivity" seemed to be not easily understood by the participants. The committee has kept records of the pass/fail rates for all categories since its inception in January 2000. This area of testing has had the lowest pass rate both in the state of Ohio as well as nationally according to ALCA's records. Prior to the 2001 testing the training sessions as described in methods were put in place. As Table 1 shows the pass rate changed dramatically.

Learning can be more successful when one subject is fit into the context of the participant's life and work. The retention is longer if there is less to conflict with their learning of other material and they see the benefit and importance of the information beyond just passing the test.

## **Conclusion**

Continued learning through industry certification programs needs revisiting from three points of view: (1) faculty, (2) students, and (3) the horticultural industry. These benefits are several to all involved in a certification process. There are many opportunities for faculty to become involved in their industry that will assist the learning of all involved—faculty, traditional and non-traditional students and the industry as a whole. The faculty must avail themselves to the industry. Faculty can remain current with information and practices used by the industry and to assist industry individuals to have up to date information from current research. Changes in the practices in the industry bring about the need for changes in training materials of which some training manuals are now over ten years old. Further, these training materials should be in the context of the adult learners' experiences. This means both practical industry materials as well as improving the teaching skills of the faculty. Teaching non-traditional students always hones the faculty's teaching skills in the classroom. In education, providing a better learning environment is the basis of improved teaching.

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