Strengthening Collaborations with Landscaping Industry and Department of Agricultural Sciences: Using the Structured Group Interview Approach for Enhancing the 21st Century Workforce

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Abstract

Higher education institutions are facing a complex challenge to better equip graduates with the necessary tools to compete in the global market. The authors of this paper facilitated a Structured Group Interview process in a Department of Agricultural and Industrial Sciences at Sam Houston State University to enhance their horticulture program by implementing a Landscape Installation and Maintenance Course. To maintain the level of competence that industry demands, two alumni landscaping managers were invited to participate in designing a course based on industry input. The purpose of this study was to use the Structured Group Interview process for university and landscape industry collaboration to create a college course in landscape maintenance and installation. During the Structured Group Interview process, the authors observed the psychosocial factors to better understand how to best develop collaborations with industry for the department which will benefit future graduates.
Introduction

The Sunbelt region of the United States has experienced population growth for several decades, confined primarily to urban centers scattered throughout the region. This trend did not slow until recent economic conditions occurred, primarily surrounding the housing crunch (Dougherty 2008). Coupled with this population upturn has been consistent growth in businesses offering landscape services for residential and commercial properties which include design, installation, and maintenance of amenity landscapes. The landscape design is a plan that provides a functional, aesthetic landscape for the consumer. Sales and installation of plant materials include turfgrass, trees, shrubs, vines, and flowers, and may also include walkways, paths, decks, retaining walls, lighting, and irrigation. In addition, allied industries such as sod farms, nurseries, equipment dealers, and fertilizer and chemical manufacturers are included in an economic analysis of this sector of the economy.

The green industry, the fastest growing sector of agricultural economy in the U.S., includes landscape services, nursery production, and retail sales. In Texas, landscape services sales have increased from $2.2 billion in 2003 to $3.5 billion in 2008 (Palma and Hall 2009). There is a similar trend in retail sales over the same time period. Nursery production sales have seen only a slight increase in sales dollars during this six-year period. The most recent national economic impact study was published in 2005, which defined the green industry in broader terms to include lawn and garden equipment manufacturing, landscape architect services, and broker services, and the national impact was $147.8 billion in 2002 with 1.96 million associated jobs (Hall et al. 2005).

Businesses engaged in landscape services are comprised of owners, managers, supervisors, laborers, office staff, and sales people with skills and expertise in a wide range of...
subjects. A typical graduate of a four-year program in landscape horticulture will enter this industry as a supervisor. With some industry work experience, a graduate may re-enter the industry as a manager or salesperson. A supervisor’s responsibilities will differ from one company to another company, yet a core set of knowledge and skills are needed to be successful. That knowledge and skill encompasses plants, soil, water, basic business principles, and horticultural operations.

The university system of providing intellectual, social and leadership growth in a continually improving environment can prepare individuals for entry to the green industry. Universities across the U.S. offer specialized programs to individuals seeking knowledge of plants, soil, water, and horticultural operations (Rom, 2004). Industry and university collaboration for the purpose of planning course content and degree plans is well documented (Lee 1996; Kock 2000; & Hop 2009). This type of educational background prepares those students who are interested in employment in landscape services. Institutions of higher learning must provide degrees that offer the required knowledge those industries demand of new graduates. A college course involving landscape operations must provide the student with needed skills and knowledge at the time they graduate and should prepare students for rapid changes to the industry. A comprehensive degree program, with landscape services at its core, offers coursework to meet this demand. The purpose of this study was to use the structured group interview process for university and landscape industry collaboration to create a college course in landscape maintenance and installation.
Background

Building Industry Connections

In the workforce education and development community, structured group interviews are commonplace in many facets of industry. In the 21st century, the United States faces the monumental challenges of budget cuts that affect the way higher education operates. Curriculum must be challenging to meet new paradigms of the 21st century workforce. Wraga (2009) succinctly states, “Shortcoming of the academic curriculum is its tendency to emphasize the integrity of the separate subjects and to neglect, even ignore, connections between and among subjects as well as between students’ academic experiences and those beyond school” (p.88). For engineering, technology, and science programs at universities, faculty must find ways to maintain cutting-edge and current programs to produce a competitive white collar professional. In addition, maintaining a program with current and new skill sets will draw more relationships with industry. According to Klawe (2004), “Industry’s interest in higher education runs deeper than the research it funds on campus, the corporate sector, for example, has been far more proactive than academia in its efforts to build a workforce more representative of the general public” (p.31). To increase the validity of higher education, industry collaboration is essential to build the new 21st century workforce.

The products of a stagnant program result in a negative effect on the landscaping profession. Innovative thinking is required and full participation from the managers is required to develop courses that will form collaborations benefitting both industry and the department.

There is one factor which can produce an immediate impact during the structured group interview process. This would be the psychosocial factor, a person’s psychological and
interaction with the social environment factors (Dictionary.com, n.d.). The observations of the manager’s actions during the structured interview process are illustrated in Table 1. According to the USGAO (1991), the face-to-face structured group interview allows very great advantages compared to other types of interview processes. Examples of advantages include: oral and visual inquiry and response, immediate feedback on the collection procedure, allows complex subject matter presented/derived, and real time follow-up to collected data.

Table 1. Observed Psychological and Social Environment Factors-Structured Interview

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<thead>
<tr>
<th>Factors</th>
<th>Physiological</th>
<th>Social Environment</th>
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<tbody>
<tr>
<td><strong>Attitude</strong></td>
<td>The participants seemed positive and ready to make a contribution</td>
<td><strong>Formal</strong>-Meeting was structured with note pads, pencils, recorder, and facilitator</td>
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<tr>
<td><strong>Emotions</strong></td>
<td>The participants seemed excited and by facial expression and body language</td>
<td><strong>Social Role</strong>-The attendees from the department allow participants to give input about 90% of the time during the session</td>
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<td><strong>Motivation</strong></td>
<td>The participants were involved and answered questions with enthusiasm</td>
<td><strong>Room Space</strong>-Participants seem to feel comfortable with ample room space and light</td>
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<tr>
<td><strong>Satisfaction</strong></td>
<td>The participants agreed with the Tasks were discussed and listed on the storyboard</td>
<td><strong>Cooperation</strong>-Participants were comfortable with each other’s input and valued each other’s ideas</td>
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While ideas and dialogue between industry and academic members are interchanged, collaborations are created in a natural state of human relationships (USGAO, 1991). The key to solidifying relationships is to agree on the “What’s in it for me?” factor -- there must be mutual
exchange of cooperation that will benefit both parties. When cooperation is formed, the ideal conditions must be present (e.g. academia-number of graduates, available technologies for teaching, department and administrative support; and industry-employment opportunities, job market, supply and demand, and economic indicators).

**Methodology**

The authors’ first step was to create a broad overall question to be answered: “Why is this study being done”. This general answer leads to a hypothesis from which general questions are created (USGAO, 1991). Upon completion of the general questions, more specific questions were derived by the authors. Specific questions were both broad and focused. Examples of broad and focused questions were: “Should a turfgrass science class be a mandatory prerequisite for this new class?” and “What turfgrass management skills should be taught in this new class?”

To create the course, a structured group interview was used to identify important skill sets which students can learn. The purpose of the structured group interview, in this instance, is to create a one or two day storyboard to illustrate what the worker does in terms of duties, skills, knowledge and traits or tools to identify the job (USOPM, 2008). Furthermore, faculty should identify cutting-edge skills to develop the course and also to continuously improve the horticulture program and maintain awareness of what industry trends. In March, 2009, the authors contacted five landscaping companies in eastern Texas and the Houston metro area. Two companies were available for the interview and the other three could not attend because of scheduling conflicts.

The session was held in the Department of Agricultural and Industrial Sciences’ conference room at Sam Huston State University in July, 2009. The participants for the session
were two experts in the landscaping industry. The structured group interview committee members included attendees from The Brickman Group and CleanScapes, Inc., who were managers at their respective companies in Texas. The original time for the structured group interview was designated for six hours. However, due to the managers’ time constraints and participants’ travel time (more than two hours), sessions had to be completed within a four hour block. During the process, there was a lunch break and three mini-breaks to ensure that the managers did not lose focus.

The session consisted of a recorder and facilitator along with one professor who teaches horticulture courses. The facilitator established these guidelines for the structured group interview committee: a) Orient the committee, b) review the description of the occupational area, c) identify responsibilities for areas of the job, c) review and refine task statements, d) sequence tasks statements or, e) identify tools, equipment, supplies, worker traits, and desired learning outcomes, f) supply other information concerning tasks, and g) task analysis.

**Results**

During the four hours of brainstorming, the experts compiled the duties and tasks to create the course. The experts provided goals and objectives for the course before creating the storyboard. The storyboard was created on the white board in a conference room on campus. Once the storyboard was completed, the tasks and duties were sequenced to provide a clear picture of how the course would be structured. Figure 1 illustrates the final structure of tasks and duties.

Figure 1. The development of the storyboard consisting of duties and tasks formulated by landscape experts.
The group also discussed tool and equipment needs for course development. This list was compiled during each discussion of duties and tasks. The list can be summarized as a) personal computers/software, and b) “tools-of-the-trade”.

Personal computers would operate the needed software packages to organize and manipulate data such as material costs, man-hour requirements for specific tasks, and depreciation of equipment. The manipulated data could be organized to create new job proposals, job specifications, or predicting material needs. The software packages may be created by the company for their specific needs, or a company may purchase commercially available software. Tools-of-the-trade includes the following:

- pH meter for soil testing
- skid steer
- truck-trailer operation
- deck mowers
- core aerators
- irrigation - pipes, fittings, nozzles, and controllers
- tree/shrub pruners
Figure 2. Course Development Chart

The chart provided the necessary structure to develop a syllabus for the course. The boxes under Duties signify objectives/competencies for the course. The tasks represent the course outline. The results of the structured group interview process provide for a quality and content-current course as opposed to creation of a syllabus with industry input. The end-results of the process (Figure 3) provide a one page example of the Landscape Installation and Maintenance course.

Tasks analysis was used to compile the data for generating the syllabus. Even though this syllabus contains the latest skills to be taught in the classroom, there will be a two-year need assessment to ascertain the validity of the content based on changes in the landscaping industry. Anticipated starting date for the course is Fall 2011.
Figure 3. One page sample of the completed syllabus from the Structured Interview Process

Sam Houston State University  
Dept. of Agricultural & Industrial Sciences  
Fall 2010 - proposed

**COURSE NUMBER/TITLE:** AGR 468 – Landscape Maintenance & Installation  
(3 credit hours)  
Lecture:  
Lab:

**INSTRUCTOR:** Tim Pannkuk, Ph.D., Assistant Professor  
Office: 216B Farrington Bldg.  
Phone: 294-3333  
E-mail: agr_trp@shsu.edu

**TEXT:** Landscape Operations – Management, Methods, and Materials. L.G. Hannebaum.  
Delmar Publishing

**COURSE OBJECTIVES:**  
Following completion of this course, students should  
- Have an understanding of and be familiar with various techniques and technologies for proper maintenance of management of landscape plants  
- Be knowledgeable about the nature and practices of landscape business and contracts  
- Have thorough understanding of scheduling landscape operations  
- Be able to develop skills for supervising various landscape operational, management, and maintenance tasks

**COURSE OUTLINE**  
Topics include:  
Introduction to landscape management  
History of landscape maintenance  
Employment opportunities and the future  
The landscape operation  
Goods and services  
Capitalization  
Selling and marketing  
Contracts and contractors  
Types of contracts  
Advantages and disadvantages of contracts  
Contracts and specifications  
Equipment selection and acquisition  
Landscape maintenance features  
Installing landscape plants  
Pruning and training landscape plants  
Woody ornamental Disease and Insect Management  
Estimating landscape management services

**Lab Topics**  
Computer Aided Drafting overview  
Development of proposals and contracts  
Budgeting  
Estimating services to be rendered  
Installing landscapes (multiple labs)  
Evaluating landscapes
Discussion

This experience has been very beneficial for both industry and academia. The authors felt that a structured group interview was a way to maximize the available time for each entity. To further engage in the use of the structured group interview process, the process created a relationship barometer to determine if the two companies wish to create a meaningful collaboration with the university. Furthermore, the authors were able to gather enough information to prepare a syllabus.

The authors found that green industry managers have a keen interest in participating in the process. In coordinating the meeting, every green industry manager contacted expressed an interest in participating. The level of interest varied from person to person, and the ability to allow time to participate in a structured group interview process also varied. Those green industry managers with ties to the author’s university were especially interested in participating.

The structured group interview process can stimulate a green industry manager’s acceptance of university horticulture programs. By participating, the managers perceive added value in the quality of the students enrolled in the program. The managers are occupational experts and identify the skills profile needed by student graduates. The green industry, like most other industries, continually implements new technology and defines recent trends. Many managers are willing and able to communicate the use of new technologies and trends to their counterparts in academia. If academia is willing to participate with industry personnel in structured group interview processes, both entities will benefit: the process can increase
confidence in a green industry manager’s perceptions of new graduates, and the university will benefit with producing graduates with appropriate knowledge and skills.

In the 21st century, higher education must be more accountable than ever. Programs need to be competitive and provide a strong source for industry to further grow their workforce. Forward-thinking must be used to maintain up-to-date content to develop competent graduates. In this day of budget cuts and program reduction, industry will play a more pivotal role with academia to maintain current, reliable, and competitive courses. More importantly, if academia does not provide competitive programs, then industries will have a difficult time recruiting the workforce needed to sustain a viable U.S. workforce. The authors strongly recommend faculty need to be engaged in forward-thinking to revise programs with industry input as the main ingredient for four-year academic programs to survive.
References


Klawe, M. (2004). Getting the university-industry partnership right or not. *Futures Forum*


