

Employer Preferences in Landscape Horticulture Graduates: Implications for College Programs



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Abstract

Plant science departments at many universities face the challenge of maintaining core programs in the face budget shortages, while responding to the needs of the green industry which employs a majority of the graduates. A survey was conducted of national landscape horticulture companies to understand the differences between preparation in academia and preparation in the profession. The results of this study show that employers prefer characteristics of a high quality individual more than specific training or job skills. Furthermore, the results suggest that employers are uncertain as to whether current methods of teaching leadership skills and traditional character development activities are effective.

Introduction

Horticulture programs across the country are faced with shrinking budgets and restructuring, causing faculty and administrators to reevaluate curricula (Looney, 2004). As four-year horticulture programs adjust to national trends of reorganization and consolidation, changes in curricula are likely to occur (Lineberger, 2001). Maintaining identity as a plant science program, while providing skills for landscape horticulture careers is a challenge facing many programs. In a Bachelor of Science curriculum, the degree in landscape horticulture leans toward technical proficiency, yet a balance must be struck between job preparation and providing a well-rounded science education (Davies, 2004). In an effort to streamline programs, the University of Georgia Horticulture Department was recently asked by the College of Agricultural and Environmental Sciences to consolidate three degree programs into one B.S. degree in horticulture. During the process several faculty raised questions regarding core curriculum and course content. The general feeling among teaching faculty was that the existing curriculum offered the minimum of basic plant sciences and there was little room for more service and technically-based courses. Based on postings to the ISHA Forum on the Future of Horticultural Science within Academia, there is a national debate over the definition of horticulture as an academic pursuit and what types of courses should be required of a horticulture undergraduate student (Darnell, 2005).

Information regarding employer preferences is typically gathered through surveys of alumni and employers. These surveys provide insight into indus-

try preferences, however, these survey tend to focus more on satisfaction with the program than on specific knowledge or skills needed by the profession. Faculty, alumni, students and employers frequently differ when surveyed about what is most important in curriculum and program content. When evaluating course requirements, faculty priorities often reflect individual areas of research or specialties more than the needs of the green industry (National Center for Postsecondary Improvement I, 1998). This situation is not unique to horticulture programs as documented in an employer survey conducted by the National Center for Postsecondary Improvement (1998), which found a “disconnection between employers and schools” when asked to rank the factors used in making hiring decisions. A survey of design school alumni at Iowa State University found there was a gap between faculty and alumni, in regards to importance of studies compared to extracurricular activities (Sauer and Ladjahasan, 2004). A disconnect between employers and students in a study based on time allocation decisions of agribusiness undergraduates was found (Siebert et al., 2002). The employers in this study valued “work experience and leadership experiences” more than students, who considered “raising grade point average and interview preparation” to be most important to them (Siebert et al., 2002 p.222).

A survey conducted by the University of Delaware Department of Plant and Soil Sciences found that alumni felt they were well prepared but favored adding courses in professional development and other non-technical skills such as oral communication, personnel management and human relations (Kitto, 1996). This corresponds with a survey of alumni from the College of Design at Iowa State University, which demonstrated that the importance of certain skills, abilities and traits was greater for entry-level employees than the emphasis placed on them by the college (Sauer and Ladjahasan, 2004). In a similar survey of crop, soil and environmental sciences alumni from the University of Arkansas, alumni suggested adding the following to course design: problem solving, working independently and in teams, followed by written communication skills, critical thinking, computer skills, and leadership skills (Madewell et al., 2003).

Employer surveys provide further insight into the knowledge, skills, and traits required of recent graduates. In the Delaware study, employers thought there should be more emphasis on professional development and largely agreed that internships and practical field experience were important. Employers

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were also clearly in favor of a “broad education” (i.e. more than just technical training). Some of the specific, non-technical skills, employers ranked high included: ability to learn on own; problem solving; time management; ethical standards; ability to speak and write clearly; and appreciation of cultural differences (Kitto, 1996). Employers in the Arkansas survey suggested adding oral communication and problem solving to course design. Data synthesis and interpretation were also considered important skills by the employers in the Arkansas survey (Madewell et al., 2003). An employer assessment at the University of Nebraska-Lincoln ranked communication skills near the top, suggesting the “ability to listen and carry out instructions” and the “ability to speak clearly on technical information,” were very important (Andelt et al., 1997, p.48). They also felt that new employees would need to increase their leadership in the areas of teamwork and problem solving. However, the highest preference in this assessment was for skills such as self-motivation and positive work attitude (Andelt et al., 1997).

Business management is another area of interest to employers. In the Delaware survey, employers ranked business management skills such as accounting, marketing and personnel management high in importance and basic sciences such as chemistry, physics and math average to low in importance (Kitto, 1996). The Delaware survey indicated that horticulture alumni “thought that internship experience would be helpful” and there should be less emphasis on basic sciences and more emphasis on small business skills. For the employers in this survey, the general feeling was that internships would provide skills such as communication, equipment operation, time management and the ability to work independently (Kitto, 1996). In a national survey of golf course superintendents, respondents indicated that “work experience, education, communication skills, appearance, and references,” were the most important hiring criteria when employing assistant superintendents (Schlossberg et al., 2004, p.35).

Technical skills are important in any landscape horticulture program. In the Delaware survey, the horticulture-related coursework employers favored most were plant identification (ranked highest), pest management, and landscape management. They also favored basic plant science courses such as plant nutrition, soil science and plant physiology (Kitto, 1996). Based on exit surveys, students graduating from the University of Georgia Horticulture Department regarded plant identification and nutrition as the most worthwhile. Courses in landscape management (design, professional practices, and landscape practices) and plant physiology were also rated highly (Bailey, 2005).

The purpose of this study was to evaluate specific employer preferences when hiring landscape horticulture students in order to help both students and faculty evaluate course content. Objectives of the study were to: 1) determine the importance of professional traits, workplace knowledge, and communica-

tion skills as perceived by landscape employers; and 2) determine the importance of technical skills learned and experiences gained while attending a four-year college or university.

Methods

A 58-question survey was developed based on a survey by the University of Tennessee Career Services and a joint survey by Texas A&M University and the University of Georgia (Pemberton, 2003; Seibert et al., 2002). Human resource personnel of regional and national landscape companies were surveyed during the Professional Landcare Network (PLANET) Student Career Days Career Fair, held in College Park, Maryland in March 2005. Among this group were representatives of some of the largest landscape companies in the United States. Their reason to attend this event was to promote their companies and recruit students in degree programs emphasizing landscape-related careers. Two interviewers, working independently, asked one representative from each company to participate in a survey about their preferences and experiences with students graduating from the University of Georgia and other four-year colleges offering a degree in landscape horticulture. To speed up the process and insure accuracy, the questions from the survey were asked verbally and recorded by the interviewers. Of the 78 companies exhibiting, 61 were surveyed. The remaining 17 were not surveyed because their representatives were too busy interviewing to take time for the survey.

Questions one through eight asked for information about the company including: size, region(s) of operation, and indicators of growth. Questions 9 through 15 were specific questions regarding University of Georgia graduates. Questions 16-36, (or subgroup A) focused on skills or traits a four-year landscape horticulture graduate should possess to gain employment with the company surveyed. Questions 37-58, (or subgroup B) were based on employers' recommendation of the amount of time an undergraduate landscape horticulture student should focus on various college experiences, both in and out of the classroom. Answers were given in the form of a numerical rating as follows: 1 (very important), 2 (somewhat important), 3 (not too important), and 4 (not at all important). The questions were grouped into two subgroups: A (skills and traits of graduates), and B (study areas and activities) A mean was computed for each employer response. The means were then ranked, first within each subgroup (A and B), then overall.

Results and Discussion

As shown in Table 1, the number of employees per company varied from less than 50 to more than 1000, with 34.4% of the companies surveyed having between 100 and 500 employees and 21.3% having between 50 and 100 employees. Almost half (49.2%) of the companies operate in the Northeast region, though all regions of the country were represented, as indicated

Table 1. Number of individuals employed by landscape companies surveyed during the PLANET Student Career Days in College Park, MD in 2005 (N = 61)

Number of employees	Frequency of response	%
< 50	10	16.4
50 – 100	13	21.3
100 – 500	24	39.4
500 – 1000	9	14.7
1000+	5	8.2
Total	61	100.0

Table 2. Location(s) of Landscape companies surveyed during the PLANET Student Career Days in College Park, MD in 2005 (N = 61)

Office location (region of US)	Frequency of response	%
Northeast	30	49.2
Southeast	19	31.2
Northwest	6	9.8
Southwest	9	14.8
Midwest	15	13.1

in Table 2. Many of the companies have a national presence and operate in multiple regions. This explains a frequency of response greater than the number of companies surveyed and a total percentage greater than 100%. Companies in the survey provide a range of landscape-related services including: landscape installation, landscape maintenance, landscape design, turf management, arboriculture, and nursery production. Additional services provided included: irrigation, construction, snow removal, erosion control, re-wholesaler, golf-course management, and holiday decorating. A large majority of the companies (78.7%, N=60) indicated their workforce has increased in the last year and all but one (98.4%, N=61) predicted an increase in demand for employees

over the next two years. Too few of those surveyed (21%, N=61) indicated experience with University of Georgia graduates to provide meaningful data from responses to questions directly related to University of Georgia students.

The results of specific questions asked in subgroup A are shown in Table 3. The highest mean scores in this subgroup were initiative, responsibility, and verbal communication. During the interviews, respondents repeatedly used words such as honesty, motivation, quality, and teamwork. Traits such as leadership, decision-making and working under pressure were considered to be no more important than working in groups, solving problems, and working independently.

The results of specific questions asked in subgroup B are shown in Table 4. Time spent studying plant

Table 3. Preference for personal skills and traits in graduates from a four-year college as determined by a survey of landscape horticulture employers attending the PLANET Student Career Days in College Park, MD in 2005 (N = 61)

Sub-Group A: Skills/Traits of graduates	Importance of skills/traits (% of respondents)							Rank In group	Rank overall
	Very	Some-what	Not too	Not at all	Mean	SD			
Ability to show initiative/self-motivation	96.7	3.3	-	-	1.03	.18	1	1	
Ability to accept responsibility	91.8	8.2	-	-	1.08	.28	2	2	
Ability to verbally communicate ideas	90.2	8.2	1.6	-	1.11	.37	3	3	
Ability to display ethical/professional conduct ^z	90.2	8.2	1.6	-	1.08	.28	3	3	
Ability to learn new tasks ^z	85.3	13.1	1.6	-	1.13	.34	4	4	
Ability to contribute to a team effort	85.3	14.7	-	-	1.15	.36	4	4	
Ability to apply knowledge/skills in workplace	82.0	18.0	-	-	1.18	.39	5	5	
Ability to follow directions	78.7	19.7	1.6	-	1.23	.46	6	6	
Ability to solve problems on the job	75.4	23.0	1.6	-	1.26	.48	7	7	
Ability to relate well to rest of team	73.8	26.2	-	-	1.26	.44	8	8	
Ability to present material clearly/effectively	67.2	27.9	4.9	-	1.38	.58	9	10	
Ability to learn after employment	67.2	31.2	1.6	-	1.34	.51	9	10	
Ability to work in a multi-cultural workplace	63.9	29.5	6.6	-	1.43	.62	10	11	
Technical knowledge	62.3	31.15	6.6	-	1.44	.62	11	12	
Ability to work independently	54.1	37.7	8.2	-	1.54	.65	12	14	
Ability to be effective in groups/presentations	52.5	32.8	9.8	4.9	1.67	.85	13	15	
Ability to work under pressure	52.5	39.3	8.2	-	1.55	.64	13	15	
Ability to conceptualize problems	50.8	37.7	11.5	-	1.60	.69	14	16	
Ability to engage in decision-making	49.2	49.2	1.6	-	1.52	.54	15	17	
Ability to adjust to changes	45.9	54.1	-	-	1.54	.50	18	18	
Ability to prepare/write professional reports	34.4	49.2	16.4	-	1.82	.70	19	22	

^z N = 60

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Table 4. Employer's recommendations of the amount of time an undergraduate horticulture student attending a four-year college should focus on various college experiences, as determined by a survey of landscape horticulture employers attending the PLANET Student Career Days in College Park, MD in 2005 (N = 61)

Sub-Group B: Study areas and activities	Importance of coursework and activities (% of respondents)							Rank In group	Rank overall
	Very	Some -what	Not too	Not At all	Mean	SD			
Learning plant identification	75.4	21.3	3.3	-	1.27	.52	1	7	
Learning to apply course material	68.9	26.2	4.9	-	1.36	.58	2	9	
Learning problem solving strategies ^z	59.0	37.8	1.64	-	1.42	.53	3	13	
Learning landscape practices ^z	54.1	39.3	4.9	1.6	1.50	.60	4	14	
Learning to utilize the latest technology	52.4	44.3	3.3	-	1.50	.57	5	15	
Learning office software ^z	44.3	36.1	16.4	1.6	1.75	.79	6	19	
Learning pest identification and control ^z	37.7	52.5	6.6	1.6	1.72	.67	7	20	
Having an internship experience(s)	36.1	47.5	16.4	-	1.80	.70	8	21	
Learning plant growth and management	34.4	41.0	21.3	3.3	1.93	.83	9	22	
Learning business skills	31.1	49.2	16.4	3.3	1.92	.78	10	23	
Learning foreign language ^y	31.2	44.3	19.7	1.6	1.92	.77	10	23	
Having a specific major ^x	29.5	45.9	6.6	18.0	1.72	.61	11	24	
Learning design-related software ^z	27.9	44.3	19.7	6.6	2.05	.87	12	25	
Having leadership experience(s)	26.2	52.5	21.3	-	1.95	.69	13	26	
Learning to analyze data ^z	23.0	55.8	14.8	4.9	2.02	.77	14	27	
Involvement in community/volunteer work ^z	21.3	47.5	29.5	1.6	2.08	.72	15	28	
Having a specific minor ^w	19.6	50.8	6.6	23.0	1.83	.56	16	29	
Involvement in professional organizations ^z	16.4	54.1	27.9	1.6	2.12	.67	17	30	
Learning how to conduct research ^z	11.9	41.0	31.2	14.8	2.50	.89	18	31	
Having good grades ^y	6.6	68.9	16.4	4.9	3.3	.64	19	32	
Involvement in social clubs	6.6	50.8	32.8	9.8	2.46	.77	19	32	
Learning greenhouse/nursery production ^z	1.6	42.6	36.1	18.0	2.71	.78	20	33	

^z N = 60

^y N = 59

^x N = 50

^w N = 47

identification ranked the highest, along with developing problem solving skills and technology training. The two lowest ranked categories in subgroup B were learning design software and studying greenhouse/nursery management. Also, close to the bottom of subgroup B were concern about grades, participation in clubs/organizations, and community/volunteer activities. Fundamental horticulture courses such as plant physiology, fertility, and plant chemistry were ranked in the middle.

When the two subgroups were combined, personal skills and traits of the individual employee are generally ranked more important than technical skills and specific knowledge learned during the college experience. This was supported by the relatively low ranking of technical knowledge within subgroup A. The least important items were greenhouse/nursery training, research techniques, and grades. Activities associated with leadership experience such as involvement in professional organizations and social clubs ranked close to the bottom. Internship experience did not fair much better, having been ranked in the lower 40% of the items.

These results have several implications for planning curricula and out-of-classroom experiences. Employers value students who have specific knowledge of plants, pests and technology, but they prize leadership skills above all else, and course content should reflect this. However, employers and academics may have very different conceptions of how a student best learns these skills. For example, employers do not value participation in both professional (30th) and social organizations (32nd) highly, although many professors encourage students to participate in clubs and organizations to acquire leadership skills

However, there seems to be a discrepancy in what employers believe students are capable of learning in college: Employers did not give high marks to leadership skills learned in college but they ranked individual skills and traits that indicate leadership ability highly. This suggests that employers believe these skills can not be taught, or are not currently taught well. Although many instructors may hope to encourage initiative and self-direction in students, the acquisition of these traits proves difficult to evaluate in the traditional landscape horticulture curricula. A study at the University of Nebraska-Lincoln found

that teaching ethics in agriculture and natural resources courses could have an impact on the personal value set of a student (Parsons and Johnson, 2001). This may warrant consideration of non-traditional pedagogies such as problem-based learning and service-learning as a means to develop the personal traits desired by employers without developing new courses to address this concern. No conclusive research has demonstrated that these types of courses are better in teaching technical content, but they have proven to increase or improve problem-solving skills, personal development, leadership, and communication skills (Steffes, 2004).

Finally, these results indicate that employers care much less about the specific major or minor program undertaken, and are more concerned with students having taken specific courses. This suggests that merging degree programs or changing department names is of more concern to those within the department and may have little effect on employment prospects for graduates, provided the course of study includes relevant content.

Summary

The results of this survey highlight the importance landscape horticulture employers place on personal traits such as character, initiative and hard work. Specific courses, such as plant identification, are more important to employers than degree titles. Leadership skills, though considered very important, are not necessarily learned through participation in conventional activities. The survey results serve as a point of discussion for plant science departments evaluating programs and degrees offered. The field of landscape horticulture is not static and most would agree that a college horticulture program can not, and should not, provide specific job training for commercial businesses. Yet, there is some obligation to help prepare students for career choices they will make upon graduation. If a goal of landscape horticulture programs is to better prepare students for a career, then further study is needed to develop methods for improving the interpersonal skills preferred by employers, while still retaining desirable technical course content. Further research is necessary to evaluate the effectiveness of instilling an attitude of professionalism in the landscape horticulture college undergraduate student while providing the technical skills and knowledge the industry demands.

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