Measuring the Economic and Educational Value of a University-based Service-learning Floral and Plant Program

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Summary. A university faculty-managed and student-run service-learning program provides seasonal plants and floral designs for holidays and special events on campus. Native and well-adapted plants for client personal use are also promoted and sold throughout the semester. Students propagate and grow greenhouse and nursery crops and create floral designs through service-learning applications in classes. Floral designs and greenhouse/nursery products are advertised via e-mail to members of the university's faculty and staff. The purpose of this study was to document program fundraising over time, as well as to measure the experiential value to the students and the quality of life benefits to the campus community. Economic benefits were evaluated by reviewing overall and average costs and earnings from the program over a 13-year period. Results indicated the average profits for the program were $6578 annually, with most sales occurring during the late spring semester. Surveys collected qualitative data from students participating in the program and indicated the experience was a valuable hands-on horticultural teaching tool, but also helped students build confidence, learn business skills in management and networking, and find their passion within the industry. Unsolicited comments from faculty and staff found that the program brought joy, had educational value, and provided a service to departments.

Today's floriculture industry consists of three major sectors: growers, wholesalers, and retailers. The total value of floriculture crop production, including bedding plants, cut flowers, foliage/indoor plants, greenhouse fruits, berries, and vegetables, and flower seeds in the United States is $4.37 billion (U.S. Department of Agriculture, 2016). Bedding plants comprise the largest segment of these earnings, bringing in $1.86 billion, whereas the total wholesale value of domestically produced cut flowers was $374 million (U.S. Department of Agriculture, 2016).

Although the number of producers in the floriculture industry has been growing slightly in recent years (U.S. Department of Agriculture, 2016), a shortage of qualified applicants remains one of the most limiting factors when hiring new employees at greenhouse and nursery facilities. When asked in a recent survey of greenhouse and nursery owners, "What, if anything, has caused your location to limit new hires in the past 12 months?," the most frequent response (39%) of respondents indicated insufficient availability of qualified labor in the market (Hall, 2017). These findings indicate a need to graduate more qualified individuals capable of working within the floriculture industry.

Similarly, the average age of farmers in the United States is 57.5 years, which is 1.2 years older than that reported in the last census in 2012 (U.S. Department of Agriculture, 2017). Of the more than 3 million farms in the United States, only 8% are operated by someone younger than 35 years (U.S. Department of Agriculture, 2017). The trend of an aging and experienced farm population is considered typical in the United States. It illustrates the need to facilitate the transfer of skills and knowledge of agricultural practices to a younger population of agricultural professionals. These trained professionals will be able to take over and ensure the continued success of agriculture professions in the United States as the aging population begins to retire (National Sustainable Agriculture Coalition, 2017; U.S. Department of Agriculture, 2017).

University horticulture programs have experienced federal and state budget cuts as high as 19%, as well as low student enrollment (LaWell, 2011). Low student enrollment is based, in part, on the perception that people cannot make a good living wage with a horticulture degree (LaWell, 2011). In 2018, tuition revenue for universities outpaced government funding as the main source of income in the majority of states, indicating tuition dollars are becoming a more important revenue stream as lawmakers struggle to fund higher education (Quinton, 2018). Underfunding results in a loss of faculty, extension, research, specific curriculum within the program, and sometimes even the need to merge horticulture departments with other departments (LaWell, 2011). In response, horticulture departments are surveying options for alternative and external sources of funding to help meet the needs of their programs (LaWell, 2011).

The current format for a floral design class in a traditional 4-year university often consists of a lecture portion, during which students are taught the process of creating a floral design, handling and caring for fresh cut flowers, the importance of the elements and principles of floral design, and the history of floral design. The lecture portion of floral design is then reinforced by a laboratory section, during which students use what they have been taught during the lecture portion to create their own individual floral design with the guidance of an instructor (Hunter, 2013). Generally, each style of design taught in the laboratory section is created by students one time, with students creating a different style of design during each laboratory section (J.M. Zajicek, personal communication).

Nursery and greenhouse production classes are formatted very similarly to floral design courses in practice; clear objectives established

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by the professor teaching the course act as the benchmark to determine student success. Examples of objectives include learning production methods of crops within a greenhouse, media selection, irrigation options and design, pest identification and management, the use of plant growth regulators, and chemical use and storage (F.A. LeDuc, personal communication). Specific objectives are covered during the lecture portion of the class and followed-up with hands-on learning and application during the laboratory portion of the course. However, traditional formats for teaching horticulture courses sometimes fail to incorporate service-learning and real-world client and scale to client needs types of experiences in the curriculum (Waliczek and Zajicek, 2010).

Although there are many definitions of service-learning, there are commonalities among the discussions regarding the practice. Service-learning teaching includes pedagogies that bring together academics with meaningful community service in a way that enriches both (Cone, 2009; Ehrlich, 1996). This occurs when students take specialized knowledge and skills learned in the classroom and/or laboratory and undertake projects in the community (Kalivas, 2008). Because of the academic component, service-learning is more than just community service (Education Commission of the States, 2002). Quality service-learning projects are designed with learning outcomes in mind and provide an opportunity for students to apply knowledge learned in the classroom within the community (Cone, 2009; Garner, 2011). The service-learning model has been successfully adapted to many educational and community needs (Billig, 2002). Service-learning conducted in a horticultural classroom improved student views toward community involvement and increased the understanding of course material, especially as alumni (Waliczek and Zajicek, 2010).

Service-learning was found to impact students beyond the classroom in areas such as emotional growth both during and after their service experience (Largent, 2009). Research also found that service-learning affected both short and long-term identities of participants (Largent, 2009). Students who engaged in service-learning 2 to 4 years in the past suggested that their experiences in the service-learning classroom continued to influence their sense of self in terms of efficacy and empathy (Jones and Abes, 2004). Finally, research indicated that those participating in service-learning were more open to new experiences and ideas and were more aware of their own socioeconomic status and had an understanding that with privilege comes responsibility (Jones and Abes, 2004).

Quality of life is multidimensional and has been conceptualized as physical, psychological, environmental, social, and motivational states (Travaglini and Cosgrave, 2019). In the United States, employees spent an average of 34.4 h per week at the office, with many employees spending most of that time at a desk or workstation, which can lead to reduced job satisfaction and increased levels of stress and ill health (Duffin, 2019; Parker, 1990; Sparks et al., 2017; Spector, 1997). Studies have suggested that physical workplace environments influence psychological and physiological factors of employees, specifically job satisfaction, and that people benefit from interactions with plants and nature (Bringslimark et al., 2007; Dravigne et al., 2008).

This study aimed to document program fundraising over time and to measure the experiential value to the students and the quality of life benefits to the campus community.

Materials and methods

Bobcat Bloom program. The Bobcat Bloom program is administered through the horticulture program of the Department of Agricultural Science at Texas State University (San Marcos) and began in 2005–06 as a means of fundraising to obtain additional resources for the horticulture program. Students grow plants during horticulture courses and are involved in learning to market the products to actual on-campus clients. Sometimes, this only involves growing a healthy plant product or designing an attractive floral bouquet; however, other times, students work to develop creative design ideas and/or identify how to offer the horticultural products in unique ways, depending on the program resources and limitations. A limited amount of funding for plant material was provided through departmental course fees but did not offer funding or opportunities for students to try new crops, horticultural products, or technologies. The Bobcat Bloom program also serves the campus community by offering discounted floral products to the departments and student organizations for various on-campus events.

Program marketing. Products are offered for sale to faculty, staff, and students in various ways. Weekly to monthly e-mailed newsletters are sent by the faculty member in charge of the program to those on a by-request mailing list. The availability of the mailing list and newsletter is spread through word-of-mouth among faculty, staff, and students, and it is advertised at plant sales. Those who are interested can e-mail their interests to the faculty advisor of the program and request to be added to the mailing list. The newsletter lists available floral arrangements and potted plant products available for sale. The newsletter also provides information regarding garden/landscape requirements for each type of merchandise offered. Regularity of the newsletter depends on the availability of stock. In addition to weekly and monthly specials, at least twice annually, there is a larger plant sale hosted by the program and students at the campus greenhouses. Bobcat Bloom targets on-campus customers to avoid competing with local businesses.

Measuring value to the campus community. Because the program mailing list is sent to individuals by request only, the value of the program to the campus community was measured through a participation rate metric. Additionally, limited unsolicited qualitative data collected over the years when the program has been operating were evaluated for themes based on comments from individuals about the program and events served.

Measuring value to students participating in the program. A short survey of open-ended questions was used to gather interview-type responses from students who were heavily involved with the program through enrollment and completion of an advanced applied topics course during the study period. Students were eligible to participate in the Bobcat Bloom program for credit if they completed a prerequisite requirement of one semester of the Basic Floral Design and/or Greenhouse and Nursery Management courses and then also chose to complete a topics course of further study for advanced elective credit. Therefore, generally only one to two students at most participated annually in the Bobcat Bloom program, with ≈20 students enrolled over

the 13-year history of the program. Fifteen students and/or alumni were sent three questions via e-mail. The questions were as follows: "how did the Bobcat Bloom program impact your learning?"; "how did the program help you prepare for your career?"; and "explain how the program impacted your awareness of the field of horticulture and the subject matter of floral design?" Qualitative data collected were evaluated for themes based on comments provided by respondents (Table 1).

Measuring the economic value of the program. Thirteen years of program bank account transaction information provided economic data regarding the expenses and deposits related to the program. Deposits made to this account included only revenue obtained from selling flowers and plants related directly to the program. Program expenses included those for cut flowers and crop-related expenditures such as greenhouse plugs, seeds, or bulbs.

Data analysis. Initial bank transaction data were entered into a spreadsheet (Excel; Microsoft, Redmond, WA). The monthly data were converted to quarterly data to reduce noise in the data and to relate the earnings to the typical semester format of the academic year by which the program operates. January, February, and March comprised the first quarter (Q1); April, May, and June comprised the second quarter (Q2); July, August, and September comprised the third quarter (Q3); and October, November, and December comprised the fourth quarter (Q4).

Data, such as creation of time variables and profit, were obtained using statistical software (R version 3.5.1; R Foundation for Statistical Computing, Vienna, Austria). Further data analyses were conducted using data visualization software (TABLEAU; Tableau Software, Seattle, WA). The annual trend of the project was determined using the earnings and cost data. The quarterly distribution of the earnings was prepared to identify any seasonality pattern in the earnings of the program.

Results and discussion

Participation rate metric. At the time of the study, of the ≈2000 staff and 1400 full-time faculty on campus, 890 people requested to be included on the Bobcat Bloom mailing list.

Economic value of the program. On average, the Bobcat Bloom program was earning a profit of $6578 every year (Fig. 1). These funds were used to support interns/student workers maintaining the gardens and greenhouses primarily during summer months and/or for purchasing tools or plant materials for the program. Results showed that the earning trend had a wavy pattern, with 3 to 4 years of an increasing trend followed by a decreasing trend. The greatest increase in earnings for the program occurred between 2012 and 2014, and the lowest earnings were obtained during 2015 and 2016 (Fig. 1).

The quarterly earnings distribution results indicated a clear seasonal pattern in the earnings (Fig. 2). During Q2 (April, May, and June), an average profit of $2869 was earned; this was the most profitable period, followed by Q4 (October, November, and December), with an average profit of $2301. Q1 (January, February, and March) was the third most profitable, with an average profit of $1399. Q3 (July, August, and September) was the least profitable, with an average profit of $629 (Fig. 2).

Q2 was the most profitable quarter because it included earnings from the most popular and well-attended plant sales during the spring. Additionally, at the end of the school year, many departments have award ceremonies or events, and they order floral designs and/or plants for centerpiece decorations. Q4 was a time of high earnings because the program offers student-grown poinsettias (*Euphorbia pulcherrima*) for sale during the holidays. There is usually a well-attended fall season plant sale in October as well. Q3 was the least profitable time of the year because it included the two summer months, July and August, when the program is short-staffed by students and when production in the greenhouse and activities on campus are delayed until the regular semester begins.

When evaluating the profitability of the program over time, results showed that the Q2 data had the least amount of fluctuation, except for a decrease in profits after 2016 (Fig. 3). The decrease in profits during these periods was due to low student involvement while the professor who managed the program was on sabbatical. The chronological trend in quarterly profits of the Bobcat Bloom program was evaluated and indicated two peaks in profit during both 2009 and 2014 (Fig. 3). After 2014, there was a dip in profits. In 2015, profits began declining after Q2 and did not increase in Q4. In 2016, the overall profit was lower compared with those of other years, with a downward trend in profits in Q4. In 2017, profits started increasing in Q1, but they decreased in Q2 and Q3. In 2018, the program was making lower profits, but there was a steep increase in profits in Q4.

In summary, the results showed that the program has good potential to maintain a profit. The $12,500 earnings obtained during 2014 is a good example of the potential of the program to raise enough funds to operate as a self-sustaining program and/or provide funds for scholarships or student wages in the future. Based on the financial analysis and decline in earning during the 2015–16 school year, earnings appeared to be affected by student involvement and leadership in the program. Therefore, to be most successful, faculty members need be persistent in recruiting qualified individuals to enroll in upper-level elective special topic courses to help run the program and be available to help supervise the program.

Benefits to student education. Eleven students who participated in coursework related to the program responded to an e-mailed questionnaire. This number corresponded with the perspective of Morse (2000) indicating that at least 6 to 10 participants are necessary to glean ideas from a target audience and for qualitative data collection techniques (Lüthje, and Herstatt, 2004). Overall themes developed during the evaluation of the responses included those related to hands-on learning and career preparation, application of industry concepts, development of networking, management, and/or business skills, and a greater awareness of the field of horticulture and their own passions. Students also recounted learning problem-solving skills and building confidence through the program (Table 1).

All 11 students (100%) stated they felt that the program helped them learn and nine (81%) stated that the program provided aid, in some way, for their career development. Seven (63%) responded that they benefitted from the hands-on application of concepts. The Bobcat Bloom program offers students

Table 1. Qualitative data collected from themes based on tallies of responses to the questions "how did the Bobcat Bloom program impact your learning?", "how did the program help you prepare for your career?", and "explain how the program impacted your awareness of the field of horticulture and the subject matter of floral design" from students and alumni who participated in the Bobcat Bloom service-learning floral program.

Theme[z]	Responses [no. (%)]	Sample responses from students and/or alumni
Learning	11 (100)	"Bobcat Bloom reinforced what I was learning through hands-on experience with real clients. I was able to practice my design skills, work with plant materials I was learning in my classes as well as other plants I had yet to learn, and taught me to understand clients' goals, needs, and wishes." "Bobcat Bloom was a supplement to my horticulture classes because it gave me practical experience, much like an internship. I could recognize plants easier and with the extra hands-on experience and I learned the pros and cons of working with different types of plants. For instance, some plants are harder to work with than others based on their growth habit or fragility." "The Bobcat Bloom Program allowed me the opportunity to more completely understand everything that was involved in the floral design process and helped to hone my skills in the art of floral design. Because of the skills learned in the program I was able to secure a job at a local flower shop that helped pay my way through graduate school." "I learned about the information and techniques necessary so much quicker than a class setting because it was hands-on work. It helped me perform better in the floral class because I had absorbed some of the material we were covering in Bloom."
Career development	9 (81)	"It helped me understand how floristry works in a business setting. Client communications, working with their requests, creating the designs and delivering them were all aspects of the job that I didn't previously think about much. It also gave me enough experience to prepare me for freelancing and taking/fulfilling my own orders."
Application/understanding of industry concepts	9 (81)	"When I took the floral design class, the teaching assistant was responsible for prepping all the plant materials, vases, and tools, as well as cleaning up after our class. With Bobcat Bloom, we were responsible for all the steps that go into the floral design from beginning to end. Bobcat Bloom gave me a small taste in what it would be like working in the floral design industry. Through my experience with Bobcat Bloom, I saw firsthand how many hours are spent prepping, designing, making arrangements, and cleaning up afterward." "Because of Bobcat Bloom and the interior plants class, I am able to make plant recommendations for my clients based their lighting conditions, maintenance requirements, and the client's desired aesthetic. I am also able to source these plants from local wholesale nurseries and make a profit by reselling the plants and pottery to my clients."

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Theme[z]	Responses [no. (%)]	Sample responses from students and/or alumni
Development of small business skills	6 (54)	"Going into the program I knew I wanted to start my own interior and landscape design business. The Interior Plants class coupled with outside classroom work with Bobcat Bloom gave me practical business experience. I learned how to create a budget, how to price and order soft and hard goods, how to properly calculate and mark up for overhead, profit, and contingency, and how to mark up my prices of goods so I can pay myself and make a living. Having the exercises in class and the practical hands-on experience with Bobcat Bloom not only taught me the basics but also gave me the confidence to begin running a business."
Development of people management skills	5 (45)	"The Bobcat Bloom program helped me learn to self-direct and to direct others, as well as about quality control on product." "The program definitely helped me learn flower types and names as well as transferrable soft-skills like quality control and supervising other students."
Development of greater awareness of the industry	5 (45)	"The program helps with hands-on classroom experience in courses such as floral design and gives insight into how the cut flower industry operates outside of the university setting (ordering, creating and selling)."
Building confidence	4 (36)	"I strongly believe that my ability to pay attention to detail has grown all thanks to this program. This program has also given me more abilities and skills that I can successfully execute in my future career." "The Interior Plants class coupled with outside classroom work with Bobcat Bloom gave me practical business experience. I learned how to create a budget, how to price and order soft and hard goods, how to properly calculate and mark up for overhead, profit, and contingency, and how to mark up my prices of goods so I can pay myself and make a living. Having the exercises in class and the practical hands-on experience with Bobcat Bloom not only taught me the basics but also gave me the confidence to begin running a business."
Development of networking skills	3 (27)	"It was great to be a part of a team working toward a common goal. I got to know my peers better through working in the Bobcat Bloom program which led to having more people to study and network with."
Learning problem-solving skills	3 (27)	"I think that many people think that they're uniquely suited for visual or tactile learning. How many times have you heard, 'I need to just do it, to see it, to learn it right.' 'I don't always get it when I'm reading about it in a book.'? I'm relatively certain that we all learn better when we augment our written learning material with hands-on learning. Bobcat Bloom was a veritable roadmap of the challenges and successes a horticulturist/florist/designer will encounter. I feel that the experiences in Bobcat Bloom enhanced my comprehension exponentially."

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Theme[z]	Responses [no. (%)]	Sample responses from students and/or alumni
Found passion	1 (9)	"It was in the Bobcat Bloom program that I really developed a passion for floral design and was given the opportunity to order flowers, create designs for campus events, and repurpose leftover flowers from the floral design class to create weekly arrangements that were sold and delivered to individuals around campus."

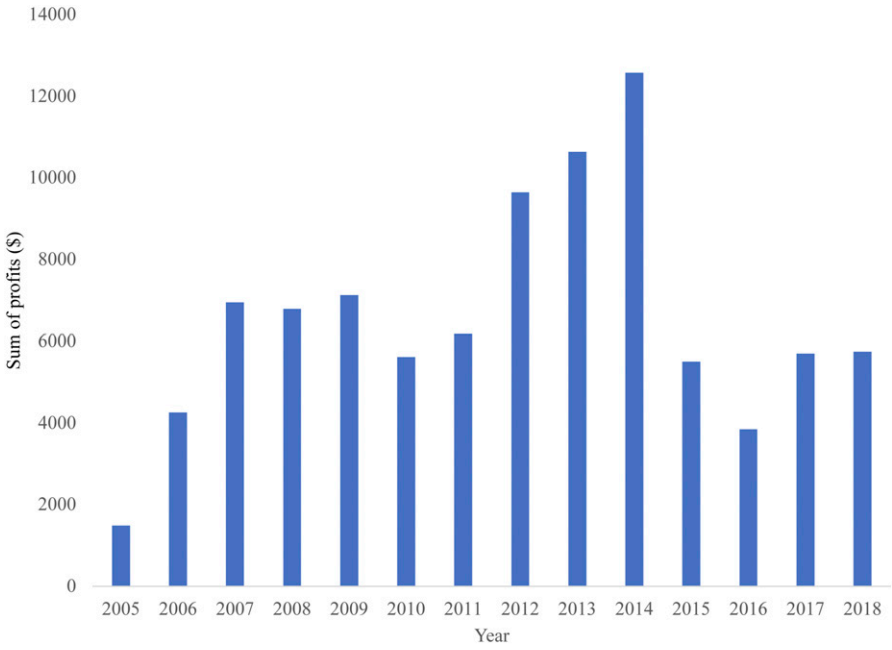

Fig. 1. Distribution of the annual profits earned from the Bobcat Bloom program during the study of the value of a university-based service-learning floral and plant program. The profits earned were totaled on a yearly basis from 2006 to 2018.

real-world lessons. The program takes basic lessons from introductory classes to another level. For example, students learn to implement basic lessons of growing one plant or designing one floral design to the scale of growing a consistently healthy crop of several plants or creating multiple floral designs based on one theme for an event. Students understand how to time crops and/or products to be ready and delivered at a particular date and time. Sometimes, students have products returned, and they learn to revamp and recover (Table 1).

Nine (81%) students stated that the program gave them a deeper understanding of the industry. Six (54%) students reported that they learned small business skills. The Bobcat Bloom program operates much like a small on-campus business, allowing students the opportunity to experience multiple facets of the floriculture and greenhouse/nursery industry from the growing of potted plant materials to the marketing, planning, and creation of floral designs to be used at actual events on campus. These skills reinforce the business management skills many of them are learning as part of their Agricultural Business degree program. Students gain small business skills, learn new design techniques, gain experience with the propagation of timed plant crops such as poinsettias and chrysanthemum (*Chrysanthemum* sp.), and gain expertise in calculating and ordering materials such as starter stock and cut flowers and foliage (Table 1).

Students participating in the program often work with, teach, and guide student workers or volunteers in managing crops and/or building floral designs. Five (45%) students reported that the program helped teach them people management skills, and three (27%) students mentioned that they learned to network with others through the program (Table 1). With traditional horticulture curricula, soft skills such as managing people and networking are both difficult concepts to incorporate into conventional lecture and laboratory sessions (Pearson et al., 2017); however, many areas of the industry necessitate managing workers and schedules (Hart Research Associates, 2015). Building a good network of industry peers has been associated with benefits related to obtaining jobs, raises in pay, and other opportunities (Marmaros and Sacerdote, 2002).

Regarding personal growth concepts, four (36%) students reported that the program built their confidence in their horticultural skills and three (27%) reported that they learned problem-solving skills (Table 1). Studies have indicated that sales in the commercial floral market have declined in recent years, partly due to a lack of professional competence among florists (Chen, 2017; Chou, 2017). Experiences relevant to increased student expertise are often obtained once students leave the campus and classroom environment and must be gained through internships, apprenticeships, or on-the-job training, which may then translate into a weaker-quality product for consumers (Chou, 2017). The Bobcat Bloom program offers hands-on on-campus challenges and allows students to practice their horticultural skills in a closed, nurturing, educational environment.

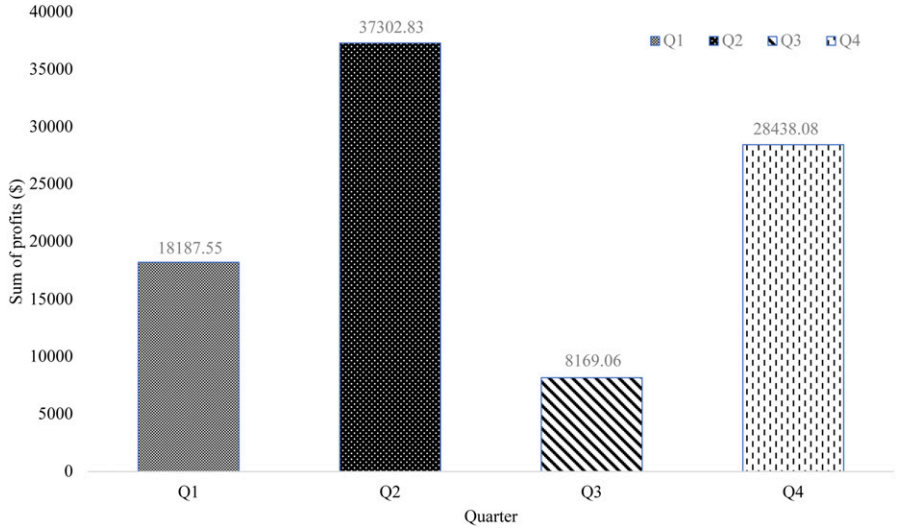

Fig. 2. Average quarterly profits earned from the Bobcat Bloom program across all years during the study of the value of a university-based service-learning floral and plant program. The average of the total profits earned by the Bobcat Bloom program between 2006 and 2018 was segregated quarterly. The first quarter (Q1) consists of January, February, March. The second quarter (Q2) consists of April, May, and June. The third quarter (Q3) includes July, August, and September. The fourth quarter (Q4) includes October, November, and December.

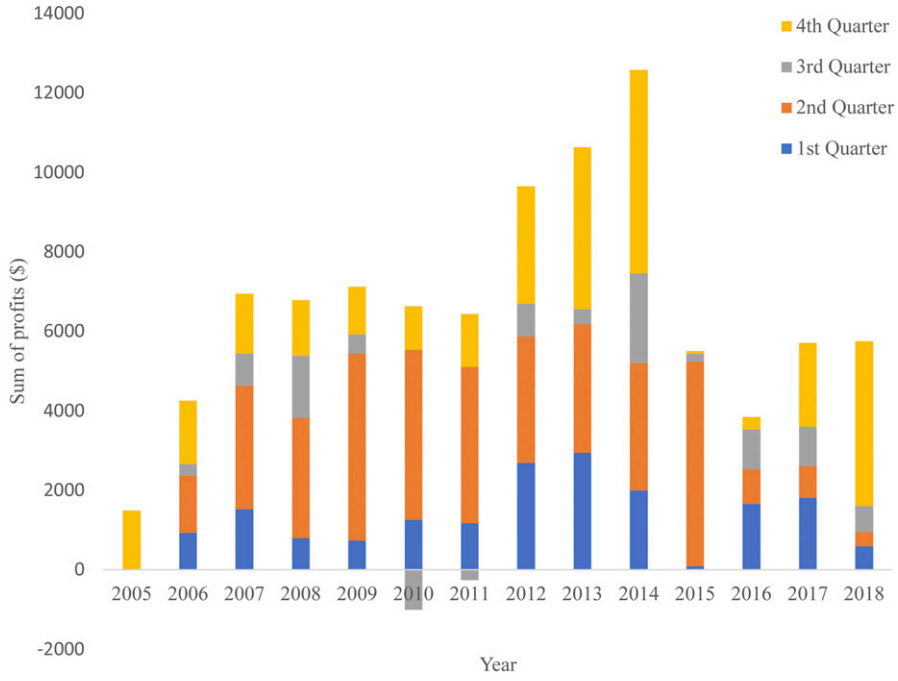

Fig. 3. Distribution of profits obtained from the study of the value of a university-based service-learning floral and plant program separated by quarters of each year. The segregated quarterly profit in Fig. 2 was expanded to show the trends or patterns in profit generation during each quarter across the years. Quarter 1 (Q1) represents January, February, and March. Quarter 2 (Q2) represents April, May, and June. Quarter 3 (Q3) represents July, August, and September. Quarter 4 (Q4) represents October, November, and December.

The program also appeared to help inspire and inform students about aspects of the industry. One (9%) student described finding his/her passion through the program, and another five (45%) felt that the program influenced him/her/others about the horticulture industry (Table 1). Past studies have found that service-learning can help students find their career purpose as well as their civic obligation and meaning in life (Waliczek and Zajicek, 2010). Some plant aficionados do not connect their interest in plants with a career in horticulture and/or lack an awareness of potential career opportunities within the horticulture industry (Wright, 2018).

Community education. Faculty, staff, and students provided unsolicited e-mailed comments, which were evaluated for themes. Themes developed during the evaluation of the comments included those related to learning about gardening, the ability of the program to provide beauty and boost morale at the workplace, the value of the program for promoting the visibility of the horticulture program, and the economics and efficiency of having a program providing these services on campus.

On-campus Bobcat Bloom customers mentioned the value of learning proper plant selection for the region because many of the plants grown and sold through the program are natives and/or well-adapted to the region. By marketing plants that grow well in the region, people who previously believed that they could not grow plants have become gardeners, which can create more robust support for the horticulture industry through the creation of successful gardening experiences. Many consumers obtain ornamental plants from big box stores due to the convenience and price of plants offered, but they may often have limited growing tips provided to them in these situations (Satterthwaite et al., 2006). Research has indicated that consumers have a greater willingness to buy plants when educational information is provided with the plant material (Khachatryan et al., 2017). Educational material covering the care and handling of plants sold to Bobcat Bloom customers is offered in the newsletters as well as through verbal communication between students and customers at the biannual plant sales. Examples of unsolicited faculty and staff customer comments included, "Love what you're doing—I'm a garden girl and always enjoy your e-mails," and "Thank you so much for letting me know about the plant sale. I was in heaven. I love that the students can tell you about the plants, and what to do with them when we get home." Programs like the Bobcat

Bloom program can help reach out, nurture, and educate new consumers as a form of horticultural marketing.

Bobcat Bloom faculty and staff customers mentioned the joy the program brings to their daily work life and how they felt the program garnered them beauty through the plants, plant products, and information provided. In the United States, employees spent an average of 34.4 h per week at the office, with many employees spending most of that time at a desk or workstation (Duffin, 2019). External factors aside, long hours and increased time spent in office environments often lead to decreased job satisfaction (Spector, 1997) and increased levels of stress and ill health (Parker, 1990). Studies have suggested that physical workplace environments influence psychological and physiological factors of employees, specifically job satisfaction, and that people benefit from interactions with plants and nature (Bringslimark et al., 2007; Dravigne et al., 2008). An example customer statement related to beauty and morale said, "Special thanks for all the work you do to brighten our workspaces and events!" Past research found that interior plants in the workplace were associated with greater job satisfaction (Dravigne et al., 2008). Additionally, active gardening as a hobby has been associated with a more positive quality of life (Sommerfeld et al., 2010; Waliczek et al., 2005).

Respondents have mentioned that before their inclusion on the Bobcat Bloom mailing list, they were unfamiliar with the existence of a horticulture program on campus. The Bobcat Bloom program acted as a form of outreach by promoting the horticulture program, agricultural department, and university to individuals both on and off campus. Student enrollment has declined in horticulture programs nationwide (LaWell, 2011). Bradley et al. (2000) found that horticulture majors had more gardening experience than nonmajors and considered the hobby of gardening a strong influence when choosing their major.

Some respondents reported that they would not otherwise be able to obtain plants and/or flowers for their offices or events without the affordable options for plants and centerpieces offered through the program. The Bobcat Bloom program allows for the greater use of horticultural products at the university, which could potentially advance the industry in other venues at other times. Among other ideas, research indicated trends in the industry toward floriculture consumers preferring locally sourced products and/or purchasing materials for "do-it-yourself" projects (Produce Marketing Association, 2016). The Bobcat Bloom program supplies products that fit these preferences.

Additionally, by using the Bobcat Bloom program, the university circulates and keeps monies on campus to help fund other learning experiences not paid for by class fees or through departmental support.

Conclusions

The Bobcat Bloom program was a successful fundraising mechanism for the horticulture program during times of limited internal funding from the department and college. Greater earnings during the program were associated with times when student and faculty participation was highest. Therefore, faculty recruitment of students into program leadership roles is an integral component for program success. Program earnings can be used to create a self-sustaining educational program, bridge gaps in funding for supplies, or be used to create scholarships, fund field trips, and/or opportunities to study abroad. A well-thought-out financial plan and a working business model could help the program proceed in this direction.

The Bobcat Bloom program provided a valuable educational space for students interested in the field of floriculture to expand their knowledge and hands-on experiences. Results from this study reinforced past service-learning research findings indicating that these types of experiences not only help with learning content (Waliczek and Zajicek, 2010) but also help students with emotional growth and short-term and long-term identity (Largent, 2009). Students reported learning and also building confidence and finding their passion.

Values of the Bobcat Bloom program extended beyond the home department to others across campus, where the program is reportedly valued as an affordable option for campus departments to obtain floriculture products for personal or event applications. The program educated campus clientele regarding horticulture concepts and provided outreach for the horticulture program and department. The program boosted morale for some university employees. Additionally, the Bobcat Bloom program increased visibility of the horticulture curriculum on campus, which could lead to increased enrollment.

In the past, the Bobcat Bloom program also provided an ideal framework to conduct research in certain aspects of the floriculture industry. To date, the program has been used to help study the marketing potential of locally sourced flower products as well as the desire of local customers for more specialty cut flower cultivars not commonly found at everyday wholesale flower companies (Short et al., 2017). Future studies should investigate the link between student participation and earnings and work toward increasing sample sizes and the collection of quantitative data regarding the value of the service-learning opportunity to both the campus community and the students involved.

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