

1. Project Title:

Development Of An On-Line Store To Enhance Student Learning In Up To Four Horticulture Courses.

2. Project Coordinator (s):

Helen Kraus
Box 7609
Helen_Kraus@ncsu.edu
515-1208
htkraus

Anne Spafford
Box 7609
Anne_Spafford@ncsu.edu
515-1190
amspaffo

3. Other Participants

- Students in Nursery Management (HS 411), Nursery Production (HS 051)
- Students in Site Design and Construction Materials (HS 485-X,Y) and Landscape Construction Studio (HS 495-C)
- Students participating in ALCA (American Landscape Contracting Association) student competition where students travel to a national competition and represent NCSU as well as participate in a job fair. Students raise the money for travel by designing and installing landscapes.
- Students in Pi Alpha Xi (PAX) (an undergraduate and graduate honor society that has a plant sale twice a year to raise money for charities and scholarships)

4. College of Agriculture and Life Sciences

5. Department of Horticultural Science

6. Project Description:

Students (and professionals for that matter) in horticulture often have trouble visualizing how the different disciplines in horticulture relate to each other. For example, landscape designers think that nursery owners don't choose to grow a broad enough diversity of plants and nursery owners think that landscapers choose the same old plants over and over. Nursery owners continue the argument by saying they would choose to grow more "cool" plants if they knew that they could sell them. This lack of communication between nursery growers and landscapers often takes root (excuse the pun) while the students are in school. From day one, these horticulturist are enrolled into two different tracts, general horticulture (those that grow plants) and landscape horticulture (those that design landscapes).

We propose a project that will sow the seeds of open lines of communication and collaboration between these two groups as well as give the students some hands-on real-life experience. We envision developing an on-line store that would be managed by students in the Nursery Management (4 year BS degree) and Nursery Production (2 year Associates degree) classes and used by the students in the Site Design & Construction

Materials course, the Landscape Construction studio, PAX, and ALCA. The on-line store would include the plants that the nursery students have grown and are now offering for “sale” to these other students to use in their projects. Green Bucks (fictitious money) used in these transactions will enable the nursery students to track marketing and sales of the plants.

The maintenance of this on-line store would allow the nursery students some real life practice in all the aspects of managing a nursery. Nursery students would select the plants to grow based on their own market analysis and discussions with each of their clients (landscape students, PAX, and ALCA). Nursery students would then purchase (with ETF funds), pot-up, and grow these plants in their labs. The dynamic, on-line store would show the current availability of plants that the classes’ nursery have for sale. Orders would be taken on-line by each of the clients. The nursery students would be responsible for monitoring orders, preparation, and delivery of the orders. Price (in Green Bucks) would be assigned based on the costs to produce the plants (which the nursery students would be required to determine) plus expected profit. A tutorial will be developed to teach the nursery students how to modify the on-line store.

Landscape students typically work on projects that incorporate research, application of research to design, and whenever possible, actual implementation of the project to fulfill service-learning objectives established by Professor Spafford. For example, students may research and generate lists of plants that would be necessary for actual landscape sites requiring biofiltration to clean polluted water runoff. Other projects may require students to research native plants to attract fauna or research plants for a specific garden type (e.g. butterfly garden). However, when it comes time to find these plants for the installation phase, students often find that many plants they’ve specified aren’t available in the nursery trade. It would be highly beneficial to research and generate a suitable list of plants that the nursery classes could produce so the landscape students can experience a more successful installation phase that assimilates all of their work building up to seeing the finished and implemented design (and subsequent thrilled client).

7. Project Objectives:

Nursery management students need hands-on practice with growing plants and managing the financial and marketing aspects of running a nursery. Over the past five years, under Dr. Kraus’s direction, nursery management students have constructed a teaching nursery. This nursery greatly enhances the students’ ability to practice growing a diversity of plants in a variety of production techniques. However, they have not had the opportunity to produce a product that meets the needs of different clients. Development of this on-line store and collaboration with actual clients (the landscape design students, PAX members, and students participating in ALCA) that represent different markets for nursery crops will provide nursery management students time and exposure to these necessary financial and marketing skills as well.

The landscape design students will also benefit greatly from this hands-on learning. To experience the whole design process from research to design inception to installation will

be invaluable to their education and better prepare them for professional work. This collaborative project will expose students to the inner workings of landscape supply and demand issues, as well as the importance and influence of open communication between various horticultural professionals.

Students participating in ALCA and PAX (some of which will also be in the nursery and landscape design courses) will gain a broader prospective of the product flow through the green industry. Imagine a student that selects a plant for production, grows the plant in the nursery, installs it in a landscape that he/she designed, and also gets to share its attributes with a retail customer during the PAX plant sale. This student would have a much richer educational experience.

8. Estimated number of students affected

Students directly impacted

- HS 411 Nursery Management (taught in the Fall semesters): 40-50 students/year
- HS 051 Nursery Production (taught in the Spring semesters): 30-40 students/year
- HS 459-X,Y Site Design and Construction Materials (taught Fall & Spring semesters): 30-35 students/year
- HS 495-C Landscape Construction Studio (taught Spring semesters): 16 students/year

Indirectly impacted

- Members of ALCA (20-30) and PAX (15-20 undergraduates)
- Clients that benefit from landscapes that landscape design students and ALCA students install (community outreach)

Totals: Directly = 116-141 students Indirectly = 35-50 students

9. Outcomes of the Project

- Enhance student learning, specifically problem solving, research, and professional performance skills
- Development of a more well rounded horticulture profession
- Less compartmentalized learning and more experiential learning driven education
- Development of communication and collaboration skills between students in different concentrations
- Increased confidence of students in their chosen professions
- Development of a model for plant selection and production management in nurseries

10. Projected impact on NCSU

- Improved student learning, specifically problem solving, research, and professional performance skills
- Increased value assigned to the Horticulture Science Department by its student body
- More successful alumni
- National recognition for innovation in teaching in these horticulture disciplines

11. Project Assessment Plan

Evaluation of the success of the on-line store in improving nursery management students learning will be accomplished in four ways. First, management of the store and plant material inventory will give students hands-on experience in assigning price, inventory management, labeling, and editing and updating the class' store web page. None of these skills have been available to these students before. How well these students acquire these skills will be evaluated in their nursery design project where they select a plant to grow and then design a production system and nursery facility for the sale of that plant. Past students have struggled with putting together a complete project, one considering all factors of the production and design. Another aspect of the project where these students have not excelled is in the selection of plant material that fit well into particular markets. Opening lines of communication with the landscape students should help nursery management students make better, more targeted, plant selections for production in the class' nursery and in their projects. A rubric to evaluate the appropriateness of their plant choices will be developed. Finally, the nursery management courses lack a certain spark that develops when students are enthused with what they are doing. Instructor evaluations have been good (4.6) and course evaluations have been satisfactory (4.4) but that dynamic, charged atmosphere has been missing. Initial steps have already been taken towards the development of this on-line store this semester and already student attitudes have improved. Dr. Kraus will continue to evaluate student enthusiasm as her students interact with the on-line store.

As part of their 'normal' course work, Landscape Design students are evaluated on their research skills (in developing appropriate plant lists for their projects), appropriate design development, client interaction, teamwork, and implementation. Students will be able to experience the information gap between designers and growers and be able to see for themselves how to overcome typical obstacles and experience how to facilitate a collaborative working relationship.

A critical and new component of this project stimulates interaction and work between students enrolled in the 2 courses. To assess the development and impact of the collaboration, we will use Vista as one of our online tools to assign discussion questions and track meaningful contributions towards student learning that occur. Since this project has a strong service-learning and learning community component to it, we will also utilize directed journal assignments (reflective writing assignments) to document, from the students' viewpoint, what they think they learned, how they learned it, why they think it's important, and how they think they will apply this information later in their careers.

12. Staffing and Support

Some equipment and some extra time (both faculty have 9 month appointments) are needed to make this vision a reality. Equipment needs revolve around the needs of the nursery students to be able to professionally prepare plants for sale and manage inventory of the on-line store. Permanent labels are needed during production and with the sale of plants to correctly and informatively identify the plants. As such we wish to purchase a

thermal printer and a PC computer to act as a server for the on-line store and run the thermal label printer. PAX will also have access to this printer for production of labels for plants during their twice annual plant sales.

EPA salary total: June salary for Helen Kraus (\$3,450.00) + June salary for Anne Spafford (\$3,450.00) = \$6,900

SPA salary total: 0

Other salary: LTS support for development of on-line store (5-10 hours)

Equipment: Thermal printer (\$995.00) + tag making software (\$795.00) + Dell computer for server and printing (\$1500.00) = \$3,290.00

Costs associated with assessment: 0

Other financial support requested: 0

Total funds requested (sum the above): \$10,190

13. Financial Support Requested

14. Fiscal Year for funding:
2005-2006

15. Staff Support and/or Technical Support Requested

Both faculty involved with this proposal have attended the Summer Institute (summer 2005) and are highly motivated and enthusiastic about this project. There are already web pages for the nursery courses in place. We anticipate needing advice, general guidance, and a few hours (5-10 hrs) of instruction and help for the creation of the on-line store component. Maintenance of the store will be conducted by the nursery students under the direction of Dr. Kraus.

16. Timetable for Implementation and Assessment (2006)

- The nursery students already have several different species of plant to offer for sale. They will continue to develop the student nursery's product line throughout the Fall 2005 and Spring 2006 semesters and will collaborate with the landscape students to generate a list of requested plants for production.
- January – May: Seek advice and guidance from LTS for creation of on-line store and on-line communication between the courses; purchase equipment; further refine anticipated requirements for on-line store
- June – July develop on-line store and tutorial
- August – December: begin teaching nursery courses with on-line store; landscape courses collaborate with nursery students in developing plant production lists and also utilize on-line store

17. Human Subjects Protection

N/A