Engaging Secondary Students with Service-Learning through Special Programming in Agricultural Education

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Introduction

- Service Learning Definitions
  - Learning that unites teaching, research, and service (Cushman, 1999).
  - More than volunteerism/community service (Rosenberg, 2000).
  - Makes students responsible in real-world context (Rosenberg, 2000).
  - A pedagogy that prepares students to participate in public life (Forman & Wilkinson, 1997).
Introduction

- Service Learning Requires
  - Vision and Leadership
  - Curriculum and Assessment
  - Community-School Partnerships
  - Professional Development
  - Continuous Improvement

Pickeral, Lennon, & Piscatelli (2008)
Introduction

- Vision and Leadership
  - Shared by many people in the experience
  - Allows for sustainable service-learning

- Curriculum and Assessment
  - Integrated learning with curriculum
  - Development of knowledge, skills, dispositions
Introduction

- Community-School Partnerships
  - Students, faculty, and community members develop plans for projects

- Professional Development
  - Novice versus expert (need structured time to develop skills in developing/implementing service learning)
Introduction

- Continuous Improvement
  - Process monitoring
  - Assessment and Feedback
  - Reflection
Setting the Context

Governor’s School

- Four week university experience in Agricultural Sciences for high school juniors
  - Take “classes” in agriculture
  - Experience local opportunities around campus
  - Complete a service-learning project (in teams of 10)
  - Approximately 30 students in 2014
Our Project

- Urban Forestry
  - Identified need in local community (Tale of 2 communities) – Opportunity for partnership
  - Experts in Education (K,S,D)
  - Experts in Aboriculture/Urban Forestry (Content)
  - Connection to the Curriculum at Governor’s School (Specific content/Technology Use)
  - Opportunity to learn structure of service-learning
Our Project Team

- 1 staff member (AEE)
- 3 faculty members (1 AEE, 2 Forestry)
- 2 undergraduate students (AEE)
- 2 graduate students (1 AEE, 1 Wildlife)
- 2 borough members (1 urban forester, 1 manager)
- 10 Governor’s School participants
- 4 CAS Staff/Administrators
Purpose

- Conduct an engaged/meaningful community-based service-learning project.

- Expose learners to opportunities available in agriculture; specific content, as well as teaching.
Objectives

- Students will learn how arborists/silviculturalists use science, math, and technology to analyze, catalog, and map trees

- Students will experience a complete service-learning project

- Students will utilize technology to complete the service-learning project
Our Project Structure

- Three Friday’s and one Saturday (8am – 5pm)
  - Conduct a inventory of trees in a local community
    - Size, Type, Location, Health
Our Project Structure

- Day 1
  - Project Overview
  - Develop Teams (Tree Species)
  - Silviculture
  - Use of GPS
  - Tree Risk Analysis
Our Project Structure

- Day 2
  - Use of iStreet/iTree applications
  - Tree walk of State College, PA
  - iTree survey practice
  - Tree climbing practice
Our Project Structure

- **Day 3**
  - Tree Inventory of Bellefonte, PA
    - Working in 3 teams
    - Surveyed approximately 200 trees

- **Day 4**
  - Develop reports of tree inventory
  - Develop group presentation on experience/reflection of experience
Results

A Summary of Tree Health for Community

- Examined approximately 200 trees on 137 streets in the borough
- Summary report was provided to Bellefonte borough
  - Recommended maintenance on 64 trees inventoried
  - Provided data on canopy cover information (shade and storm water benefits)
  - Recommended focused future inventory on older-class zones in borough

Content Learned

- Tree Identification
- Tree health indicators
- Structural problems with trees
- Tree climbing skills
# Recommended maintenance

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<thead>
<tr>
<th>Maintenance</th>
<th>Count</th>
<th>%</th>
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<tbody>
<tr>
<td>Crown raising over sidewalk (SW)</td>
<td>13</td>
<td>7.0</td>
</tr>
<tr>
<td>Crown raising over street</td>
<td>7</td>
<td>3.8</td>
</tr>
<tr>
<td>Crown raising over (SW) &amp; street</td>
<td>14</td>
<td>7.5</td>
</tr>
<tr>
<td>Deadwood larger than 4 inches</td>
<td>15</td>
<td>8.1</td>
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<tr>
<td>Structural prune – young tree</td>
<td>9</td>
<td>4.8</td>
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<tr>
<td>Multiple issues</td>
<td>6</td>
<td>3.2</td>
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</table>
Results

☐ Technology Use
  - Use of iPad
  - iTree application (Species, location, health)

☐ Teamwork
  - Communication
  - Team dynamics
  - Presentation/teaching experience

☐ Immersion into Service-Learning
  - Developed understanding of practices in service-learning
Conclusions

- Service-learning opportunities provide students the chance to link classroom learning to real-life experiences.

- Students were able to develop knowledge, skills, and dispositions for engagement to support a community need.

Speck, 2001
Conclusions

- Students were able to develop knowledge and skills specific to the content.
- Students were able to develop their own team work and presentation skills.