

Local Food and Farm to School Education Project: Supporting Nutrition and Dietetic Student Achievement of Core Knowledge and Competencies Through Local Food-Focused Service-Learning Opportunities

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Local food education, such as farm field trips, school/community gardens, local food taste tests, and cooking with local foods, is an effective way to teach children and adults where their food comes from and to provide them with positive associations around healthy eating. Activities involving local foods are important teaching tools that engage children and adults in healthy eating behaviors while building connections to agricultural heritage and rural communities. In collaboration with Western Carolina University's Didactic Program in Dietetics and Dietetic Internship programs and Lenoir-Rhyne University's Dietetic Internship Program, ASAP (Appalachian Sustainable Agriculture Project) is implementing the Local Food and Farm to School Education Project, an innovative combination of activities that integrate experiential local food and Farm to School (F2S) training and resources into the education of future Registered Dietitians (RDs) or Registered Dietitian Nutritionists (RDNs) and health professionals. The Local Food and Farm to School Education project empowers undergraduate and graduate students to incorporate hands-on experiences focused on local farms and food in their work with children and adults.

Experiential teaching and learning offers many benefits to undergraduate and graduate students including: civic engagement, concern for community issues, and greater confidence and skills to work with diverse populations.¹

² Service-Learning (SL) in particular, a form of

experiential education, provides a link between academic learning and community service. In this regard, SL experiences provide the opportunity for nutrition and dietetics students to develop dietetics-related skills and increase their potential to become successful food and nutrition professionals.² The goal of the Local Food and Farm to School Education Project, in part, is to teach nutrition undergraduate students (NUs) and dietetic internship students (DIs) how to incorporate local food education (hands-on learning with fresh, local foods) into their future careers while meeting the 2012 Standards of the Accreditation Council for Education in Nutrition and Dietetics (ACEND) core knowledge requirements and competencies for the RD.

While many different F2S programs exist nationwide, this project is unique because of its "upstream" and systemic approach. This project models how local food education can be implemented in a university setting, demonstrates how local food education dynamically increases students' interest in healthy food, and provides engaging teaching methods. NUs and DIs have the opportunity to observe how local food impacts children and adults, learn about F2S implementation, and develop confidence to conduct



An undergraduate student assists children in making salsa with local ingredients.

local food activities. Through their own personal experiences with local foods and hands-on education, NUs and DIs are more likely to incorporate these activities into their professional practices and into their personal lives as well.

In order to implement this project, ASAP first established two F2S Learning Labs, one at a K-8 public school and another at a Head Start preschool. At the Learning Labs, taste tests in the cafeteria and classroom, cooking in K-2 classrooms, and garden lessons with preschool and K-2 classes occur on a weekly basis. NUs are able to participate in the local food activities to complete academic requirements. For example, an NU may prepare and provide sample "kalesadillas" featuring local kale in the cafeteria during lunch periods on Monday, teach children in grades K-2 about soil amendments in one of the school's gardens on Wednesday, and make spinach smoothies featuring local spinach with children in grades K-2 on Friday. The Learning Labs also serve as rotation placements for DIs to complete foodservice management and community rotation competencies. Table 1 provides examples of local food and F2S activities and matching Core Competencies for RDs or RDNs that DIs have completed through this project.

Before participating in the weekly activities at the Learning Labs, NUs and DIs are required to attend a half-day local food and F2S workshop (which is offered at the start of each semester). The workshop training involves an "experience" such as visiting a farmer's market or a local farm, an introduction to F2S, and a variety of example local food activities such as cooking classes and gardening. The workshop serves to connect the students to local food and farms, as well as provide students with knowledge, skills, and tools to be able to assist with or facilitate local food activities. Students are provided a local food and



A nutrition undergraduate student and dietetic intern work collaboratively to entice children to try local, raw sweet potato sticks during lunch.

Table 1. Selected Examples of Foodservice Management and Community Nutrition Rotation Competencies and Matching Local Food and Farm to School Activities

2012 Core Competencies for the RD (CRD) ¹	Local Food and Farm to School (F2S) Activity Foodservice
CRD 1.3 Justify programs, products, services, and care using appropriate evidence or data.	Identify and research a piece of equipment to assist foodservice staff in preparing and serving local and fresh foods. Present organized information (specs of equipment, cost, gained efficiency, etc.) to Nutrition Services Director, staff, and F2S coordinators if applicable.
CRD 1.4 Evaluate emerging research for application in dietetics practice.	Complete a F2S literature review related to foodservice and/or Child Nutrition Programs. Literature review includes identifying research articles related to the topic, reviewing articles for evidence, compiling results, and synthesizing/summarizing findings.
CRD 1.5 Conduct projects using appropriate research methods, ethical procedures and data analysis.	Identify or develop a recipe that uses a local food item that would be feasible to feature on a school menu. Conduct a taste test with that recipe and evaluate the recipe with the taste test population.
CRD 2.2 Demonstrate professional writing skills in preparing professional communications (Guidance: examples include research manuscripts, project proposals, education materials, policies and procedures).	Prepare and submit an abstract based on a F2S project to an academic or organizational conference such as the Academy of Nutrition and Dietetics Food & Nutrition Conference & Expo (FNCE). Create a monthly F2S article to be sent home in school's newsletter.
CRD 2.5 Demonstrate active participation, teamwork and contributions in group settings.	Work collaboratively with F2S coordinators, teachers, cafeteria staff, and farmers. Organize farm field trips for teachers and their students. Work to build a connection between the classroom and cafeteria. For example, organize a class trip to the cafeteria during non-meal hours to interview the cafeteria staff or learn about school meals.
CRD 3.2 Demonstrate effective communications skills in a variety of formats. (Guidance: Formats include oral, print, visual, electronic and mass media methods for maximizing client education, employee training and marketing)	Teach local food cooking lessons and/or garden lessons. Maintain a F2S bulletin board. Deliver a F2S or local food in-service for foodservice staff, or teachers, or parents. Identify what skills/knowledge a group would like to acquire related to F2S and local foods and provide a learning experience on those skills/knowledge.
CRD 4.1 Participate in management of human resources	Coordinate and manage F2S volunteers for F2S activities.
CRD 4.2 Perform management functions related to safety, security and sanitation that affect employees, customers, patients, facilities and food.	Review and become familiar with food safety guidelines for cooking with local foods, cooking with food from school gardens, preparing taste tests, and cooking in the classroom.
CRD 4.8 Conduct feasibility studies for products, programs or services with consideration of costs and benefits.	Conduct a feasibility study for sourcing and purchasing local foods in place of non-local foods, with consideration of cost and benefits.
2012 CRD	Local Food and Farm to School (F2S) Activity Community Nutrition
CRD 1.3 Justify programs, products, services, and care using appropriate evidence or data.	Based on needs of site placement, write a grant proposal to fund a F2S program, a component of a F2S program, or a school garden.
CRD 2.5 Demonstrate active participation, teamwork and contributions in group settings.	Work collaboratively with F2S coordinators, community partners, teachers, cafeteria staff, and farmers. Organize farm fieldtrips for teachers and their students. Work to build community connections that strengthen a F2S program and its sustainability.
CRD 2.8 Apply leadership skills to achieve desired outcomes.	Explore and initiate new local food activities that reach an interested audience or serve a need of the school community.
CRD 2.9 Participate in professional and community organizations.	Volunteer at a farmers' market or other community organization that supports local farmers.
CRD 3.3 Develop and deliver products, programs or services that promote consumer health, wellness and lifestyle management. (Guidance: students/interns should consider health messages and interventions that integrate the consumer's desire for taste, convenience and economy with the need for nutrition, food safety)	Teach local food cooking lessons and/or garden lessons. Maintain a F2S bulletin board. Deliver a F2S or local food in-service for food service staff, or teachers, or parents. Identify what skills/knowledge a group would like to acquire related to F2S and local foods and provide a learning experience on those skills/knowledge.

The tables above provide examples of local food activities that accomplish specific competencies. Although not an exhaustive list of potential local food activities that meet competency requirements, ASAP (Appalachian Sustainable Agriculture Project) has had success in working with DIs using the activities listed above.

1. 2012 Accreditation Council for Education in Nutrition and Dietetics (ACEND) Standards for Internship Programs in Nutrition and Dietetics Leading to the RD Credential adopted February 24, 2012

F2S notebook containing resources to support them in conducting their own local food activities as they begin their careers.

During the school year, there are multiple ways in which NUs and DIs can participate in the local food activities previously mentioned. Figure 1 summarizes the different ways in which the two groups of students may participate. NUs may complete required community service hours or an honors project, they may participate as part of a club activity, and they may enhance their leadership skills by becoming a Farm to School Fellow. A Farm to School Fellow is a minimally paid, internship position. Fellows are responsible for leading the local food activities at the Learning Labs, facilitating the other university students' participation in the local food activities, procuring local food items each week, and providing support to university faculty to integrate local food activities into their courses. The Farm to School Fellow positions also fulfill university educational goals related to student leadership.

As a result of the structure of their program, DIs participate in the Local Food and Farm to School Education Project in different ways than NUs. For their foodservice management and/or community rotations, DIs can complete a variety of competencies through local food activities at either Learning Lab or their rotation sites.

Since August 2011, a total of 76 DI and NU students completed the comprehensive local food and F2S training, nine DIs completed foodservice management and community nutrition competencies through local food activities at

their respective rotation sites, 20 NUs volunteered or completed service-learning requirements through local food activities at the Learning Labs, and three NUs have served as Farm to School Fellows. Although evaluation outcomes are still being collected and analyzed, benefits thus far include unique rotation placement for supervised practice hours, civic engagement, opportunities to be a leader among their peers and in the community, and meaningful application of didactic knowledge to nutrition education and foodservice management projects. According to NUs and DIs, they are gaining hands-on experience with children and learning how to effectively educate and work with children, skills that are not always taught in academic programs. They are trying new and local foods and using the recipes they teach the children at home. They are enthusiastic about their experiences and the impact they are having on children and are enjoying the project.

In order to prepare future RDs or RDNs and health professionals to incorporate local food and F2S in their careers, the Local Food and Farm to School Education Project establishes



Undergraduates on farm field trip

an academic curriculum through SL opportunities that offers NUs and DIs hands-on learning experiences. The SL experiences will ideally have a lasting impact as these students become professionals and incorporate local foods and F2S into their own work and impact the health of the food environments where they work.

1. Rosenkranz R. Service-learning in higher education relevant to the promotion of physical activity, healthful eating, and prevention of obesity. *Int J Prev Med.* 2012;3:672-681.
2. Heiss CJ, Goldberg LR, Weddig J, Brady H. Service-Learning in dietetics courses: A benefit to the community and an opportunity for students to gain dietetics-related experience. *J Acad Nutr Diet.* 2012;112(10):1524-1527.

Figure 1. Ways in which nutrition undergraduate students and dietetic intern students can participate in local food and Farm to School Service-Learning opportunities

