

# A Convergent Mixed-Methods Exploration of the Effects of Community-Engaged Coursework on Graduate Student Learning

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## ABSTRACT

**Objective:** To examine the impact of a community-engaged assignment on graduate student learning in the nutritional sciences.

**Design:** Convergent mixed-methods design with parallel data collection and terminal merging of data. Data were composed of grant proposals, reflection papers, and informal course evaluations from 2 semesters of the same course. Fall students wrote proposals on behalf of a community partner whereas spring students wrote fictitious grants to improve nutrition on their campus.

**Setting:** A large public university in northeastern US.

**Participants:** Students enrolled in the fall (n = 19) or spring (n = 14) semester of the same graduate nutrition course.

**Phenomenon of Interest:** Grant quality, student engagement, and collaboration with peers.

**Analysis:** Quantitative rubric-based rating of grant proposals, emergent and thematic qualitative coding of open-ended responses, and independent-samples *t* test of Likert-scale questions. Data were compared between semesters and reported in a contiguous narrative approach.

**Results:** Students across semesters experienced academic and personal gains from the assignment. Comparatively, fall students expressed enhanced engagement, improved group dynamics, more frequent application of the assignment to their lives, and a better aggregate grant score.

**Conclusions and Implications:** Both experiential and community-engaged coursework can enhance learning outcomes at the graduate level and prepare students for careers in nutrition.

**Key Words:** community engaged learning, comparative study, experiential learning, graduate education, nutritional sciences (*J Nutr Educ Behav.* 2018;■■:■■–■■.)

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## INTRODUCTION

Experiential learning is a process that allows students to learn through experience and reflection. Drawing from the works of Jean Piaget, Kurt Lewin, John Dewey, Paulo Freire, and others, Kolb<sup>1,2</sup> established Experiential Learning Theory, portrayed as a learning cycle of concrete experience, reflective observation, abstract

conceptualization, and active experimentation. Community-engaged learning, also known as service learning, is a form of experiential learning and a fundamental component of education.<sup>3</sup> Community-engaged learning aims to enhance the connection between community-based work and course material and can be a successful pedagogical tool at all grade levels, including higher education.<sup>4,5</sup>

Research has identified many beneficial outcomes from service learning activities, such as the development of interpersonal and leadership skills, higher test scores and grade point averages, and deeper understanding of course material.<sup>6-8</sup> Service learning in higher education also has a positive impact on social and cultural outcomes because students become more aware of diversity and difference.<sup>9,10</sup>

In the US, the field of nutrition and dietetics has grown substantially owing to longer life spans, increasing obesity rates, and the preventative role nutrition has in health. Employment in these fields is projected to increase by 16% from 2014 to 2024, a rate much faster than the average for all occupations.<sup>11</sup> Within higher education, community-engaged learning can be integrated into the nutrition and dietetics field for students to expand

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their knowledge and prepare them for this growing profession. Nutrition students can discover their future job direction and gain hands-on experience needed for entry-level registered dietitians.<sup>12</sup> In fact, in 2012 the Academy of Nutrition and Dietetics Council on Future Practice recommended that dietetic programs incorporate learning that takes place out of the classroom to “develop students’ critical thinking, leadership, communication and management skills by providing opportunities to experience them in the context of professional work settings.”<sup>13</sup> Given this direction for current and future dietetics programs, it is necessary for dietetics educators to have evidence-based models of service learning approaches within the field of nutrition. Likewise, entry-level registration eligibility education requirements for registered dietitians is moving from a baccalaureate degree to the minimum of a graduate degree as of January 1, 2024.<sup>14</sup> Thus, effective service learning models within nutrition education are needed at both the undergraduate and graduate levels.

Students can benefit from community-engaged learning on academic, professional, and personal levels through active collaboration with peers.

Several studies have analyzed the impact of community-engaged learning within nutrition sciences at the undergraduate level.<sup>13,15-18</sup> For example, students in 1 nutrition service learning course better applied nutrition knowledge to real-life settings,<sup>15</sup> whereas students in another service learning course showed significant improvements from baseline in areas such as teamwork, inspiring support, recognizing others’ contributions, and collaboration.<sup>16</sup> At the graduate level, nursing, nutrition, and pharmacy students at 1 school collaborated to treat an elderly population. The cultural skills and knowledge of the nutrition graduate students and dietetic interns significantly increased. In addition, there was a decrease in the malnour-

ished category of this elderly population as a result of the nutrition education and interventions provided by the students and interns.<sup>19</sup> In another graduate-level nutrition course, students provided nutrition education to local elementary school students. Positive learning outcomes were noted for both the graduate and elementary school students.<sup>3</sup>

Although these examples highlight the benefits of community-engaged learning opportunities in the nutritional sciences, they are mostly focused on single-semester outcomes and do not often provide comparisons with other pedagogies. Studies at the graduate level in other health-related professions reported on the successes of community-engaged learning methods,<sup>20,21</sup> but again they often used a case study approach without comparison groups. Given the sparse literature analyzing and comparing community-engaged learning within graduate nutrition courses,<sup>3,19</sup> the purpose of this study was to evaluate a community-engaged assignment within a graduate nutrition course on student learning and related outcomes.

## METHODS

This study used a convergent mixed-methods design<sup>22</sup> to compare 2 sections ( $n = 33$ ) of the same graduate course, Current Applications in Nutrition, taught during the 2015–2016 academic year at a public university in the northeastern US. The course is required for students to earn a master of science degree in nutrition and food science. In fall, 2015 (F15), the course was offered with a community-engaged learning assignment, whereas in spring, 2016 (S16) it was not (although it was still structured using Kolb’s<sup>1</sup> Experiential Learning Theory). The same instructor taught both sections and each semester lasted 15 weeks. The intentions of the course were for students to develop detailed, in-depth knowledge of recent findings in human nutrition and to apply this knowledge by learning how to write a research proposal. The syllabi, lectures, and assignments for both semesters were the same with 2 exceptions: (1) an additional grant writing workbook was required in S16

because of student feedback from F15, and (2) an informal (ungraded) peer review critique activity was included in F15 and formalized (graded by the instructor based on feedback students provided to their peers) in S16.

## Community-Engaged Learning Class

The most substantial difference between semesters was in the development of a fundable project idea. In F15, the instructor partnered with a local elementary school’s parent-teacher association (PTA) that was looking for grant money to expand the elementary school’s garden program. The PTA provided the graduate students with a list of ideas for garden projects they wanted to pursue as well as a tour of the school grounds, garden, and storage spaces. For their first assignment, students were required to identify active funding opportunities that (1) were appropriate to support 1 of the PTA’s ideas; (2) allowed the PTA to submit the proposal, via eligibility requirements; and (3) had submission deadlines at or after the end of the semester. Students were then divided into 4 groups of 4–5 students, and each group was assigned a project scope and grant funding opportunity. No group had the same project or funder, and grant requirements and formats differed among groups. Projects focused on expanding the size or seasonality of the school’s garden, obtaining and implementing a garden-based curriculum, or purchasing and using a kitchen-on-a-cart to teach students food preparation techniques in the classroom. Funders were composed of local and national education associations, a local nonprofit organization, and a food company.

Each week, groups drafted 1 section of the grant proposal: needs statement, goals and objectives, program plan, evaluation plan, and budget. The PTA members were available for consultation via e-mail to answer questions regarding school administration, financing, and feasibility. Toward the end of the semester, groups submitted a draft of their complete grant proposal and each student peer-reviewed another group’s proposal, making suggestions for additions or

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