

Service Learning as a Mode to Deliver Course Learning Outcomes in a Research-Based Exercise Science College Course

*Dr. Jennifer Lape Kaiser and Madison Skaggs
Department of Exercise Science, Northern Kentucky University*

ABSTRACT

The following case study presents an approach to teaching research courses in undergraduate exercise science programs. Research courses are commonly required in the curriculum for this degree. Service learning (SL) is an effective way to promote student learning outcomes (SLOs) by providing hands-on experience for the students, and should be considered in exercise science research courses. Quantitative and qualitative survey results from students over two semesters of SL in an exercise science course are presented.

Keywords: student philanthropy, civic engagement, kinesiology, undergraduate

As part of the typical undergraduate college curriculum, many programs require students to complete at least one research course. These courses prepare students to effectively identify, consume, and synthesize peer-reviewed academic articles, and oftentimes, practice the development of their own research projects. In the kinesiology domain, research courses expose students to the utility of academic research in the movement sciences. Students who study exercise science under the kinesiology umbrella primarily go on to obtain a range of certifications or licenses that equip them to work in direct patient care in a range of medical and performance settings. Because of the highly applied nature of their future careers, it is vital that students in exercise science programs receive high-quality, hands-on training in a variety of settings. A way to provide exercise science students with applied experience is to teach the research course curriculum requirements through the lens of service learning (SL).

SERVICE LEARNING

SL is an educational practice that provides students with opportunities to bridge the gap between theory and practice by applying classroom concepts in community settings (Johnson & Baker, 2015; Santiago et al., 2020). Several universities have found evidence for the effectiveness of SL in the application of exercise science concepts by having students develop programming in the public health domain (Johnson & Baker, 2015; Sherwood & Yingling, 2017). SL provides students with the opportunity for authentic experiences applying classroom skills, which has been found to increase student self-efficacy for the material (Cleveland & Peterson, 2022). Often, students in SL courses are partnered with underserved community populations as a way of developing awareness and sensitivity toward diverse populations with whom they may not otherwise work during their education (Santiago et al., 2020; Wilson et al., 2021). Thus, students also use SL courses to apply exercise science

principles to the development of special populations programming. For example, Santiago et al. (2020) detail an SL project in which kinesiology students developed programming for children with disabilities. Oftentimes, those students with SL experience are more likely to get involved with other community programs and opportunities following their experience (Sherwood & Yingling, 2017).

At Northern Kentucky University, instructors across many disciplines have partnered for over 20 years with a student philanthropy program called the Mayerson Student Philanthropy Project (MSPP) as a way of implementing SL. Typically, these courses combine the teaching of the subject matter with the opportunity for student philanthropy and civic engagement, with the intention of ultimately enhancing student retention and engagement (Ferrante, 2006; McDonald & Olberding, 2012; Millisor & Olberding, 2009). In their 2012 long-term study, Olberding found that most students engaged in the MSPP reported enhanced awareness of social problems and nonprofit organizations and that engagement with a community partner helped students learn the curriculum and apply course content. Of significant importance is that student engagement with MSPP courses has been shown to increase student retention and four-year graduation rates (Larson et al., 2020).

The objectives for this case study are: 1) to demonstrate the utility of service learning as a vehicle for achieving student learning outcomes in an undergraduate research course, and 2) that the integration of SL within the course would aid in students identifying social problems, reframe their intentions and behaviors related to social responsibility, discover the philanthropic process, and use their critical thinking, communication, leadership, and other work-life skills. The reported student experiences from this course provide evidence for the continued application of kinesiology concepts in the community to allow for hands-on learning through SL.

RESEARCH TRENDS COURSE IN EXERCISE SCIENCE AND THE MSPP

Many times, students can find the subject matter of research courses to be dry and uninteresting. Thus, the integration of the MSPP in a research trends course allows students to develop a research project that can be applied to an authentic scenario. In this way, the course material becomes interactive and dynamic for the students, potentially motivating them to engage with their peers, the instructor, and the course concepts with more success (e.g., development and application of research skills). All MSPP courses have three core requirements: 1) provide a local nonprofit with \$2,000 in grant money; 2) instructors intentionally link course learning outcomes to the philanthropy project; 3) students must have direct contact with the community; and 4) the choice for how the money is invested must come from the students (Larson et al., 2020).

Course Assessment and Outcomes

The course, Research, Trends and Issues, is offered in a 16-week format, in person, for three credit hours. The student learning outcomes (SLOs) associated with this course are typical of those in an upper-class undergraduate research course; they include research-related outcomes like “Identify and describe the sequence of the major steps involved in conducting a research study” and “State a research problem in terms of a testable hypothesis.” The outcomes specifically associated with the MSPP were listed separately on the syllabus and included items like “Identify social problems and nonprofit organizations in the community” and “Discover philanthropic processes.”

The final product for this course is a research project proposal that follows a linear path from a needs assessment, through testable hypotheses, review of literature, appropriate methodologies, and grant funding allocation (Table 1). For example, students may find that

there is empirical evidence regarding the relationship between ownership of appropriate footwear and frequency of exercise among low socioeconomic status (SES) adults and design a study that reflects this evidence; the grant funding may go to providing appropriate

footwear to low SES adults in the community. Due to the volume of work and writing in this course to be completed over just one semester, some assignments for the students were completed in groups, and others were completed independently.

Table 1

Course Assignments

Assignment	SLOs	Percentage of total grade
Attendance		30
CITI Training		1
*Needs assessment	**Identify social problems and nonprofit organizations in the community Identify and define a meaningful research	2.5
Research questions, hypotheses, purpose statement	problem; State a research problem in terms of a testable hypothesis Identify significant database sources	3
*Annotated Bibliography	related to educational research	2.5
Introduction		5
Literature Review	Provide an understanding of the utilization of a review of related literature	5

*Methodology	Choose appropriate design for selected experimental studies	5
Final Paper Draft 1	Design a research project	10.5
Final Paper		10
*Grant allocation	**Recognize and discover philanthropic processes in grant seeking and grant making	2.5
*Presentations		15
Peer Reviews	**Use critical thinking, communication, leadership, and other work-life skills	3
Group Participation		5
Total		100

**Assignments completed as a group; **MSPP course objective*

For the MSPP civic engagement portion of the course, the students began the semester with a site visit to the partner community nonprofit agency. This agency is one that provides education and resources to adults who are “re-entering society” after incarceration or drug and alcohol addiction. The facility has an onsite fitness center that is underutilized by its community members. During the initial visit, the students toured the center in its entirety, spent time in the fitness center, and attended a presentation by the development and program directors to learn more about the center and the demographic they serve. Additionally, the students completed their needs assessment while onsite by interviewing staff members and

distributing surveys to community members. Students used the outcomes of their needs assessments to develop the remainder of their project proposals, highlighting empirically validated ways to enhance use of the onsite fitness center. Often, the MSPP courses start with students conducting internet research to discover and identify nonprofits with which to partner. However, due to the volume of the course content to be completed in one semester, the nonprofit was pre-identified by the instructor so that students could develop their needs assessments early in the semester and have ample time to complete the research proposals.

Near the end of the semester, students were required to present their research project

proposals to the rest of the class. The research project proposal presentations demonstrated the culmination of the service-learning element of the course and included items from the course SLOs as well as those from MSPP SLOs. Course SLO requirements included items like topic and context, literature, proposed study, methods, etc. To assess the MSPP SLOs, the students developed a voting rubric to assess the viability of the project implementation at the nonprofit agency. Scoring items developed by the students included elements like breadth of impact, appropriate use of grant funds, practicality of implementation, etc. The peer voting rubric was separate from the course rubric and the peer voting had no impact on the students' grades in the class. Rather, the purpose of the peer voting was to determine which project would be ultimately implemented at the nonprofit agency by applying the \$2,000 grant funding.

incorporation in the class, both in relation to the course objectives and the community interaction (Table 2).

STUDENT EXPERIENCE ANALYSIS

Quantitative Results

All students who participated in the MSPP Kinesiology research course in Fall 2022 and Spring 2023 semesters were asked to complete a survey at the end of the semester that is distributed among all MSPP courses. IRB approval for this survey was granted prior to the administration of the surveys to the students and all responses were kept confidential with the student information de-identified; the instructor was blind to the survey respondents and participation had no bearing on the students' grades in the course. The survey was developed and conducted by the MSPP team, and all items were arranged on a five-point Likert scale of 1 (strongly disagree) to 5 (strongly agree). Included were questions that assessed the MSPP outcomes and asked students to consider both their engagement with MSPP and the course material. Overall, students reported a subjective positive experience with the MSPP

Table 2

Post-Survey MSPP Outcomes (N=20)

	Median	Range
Better understanding of community needs	5.0	1
More aware of nonprofits	5.0	1
MSPP motivated me to be more active in class	4.5	3
MSPP enhanced enthusiasm for class	5.0	2
Understood class better because of MSPP	5.0	3
MSPP fit well with course goals	5.0	1
Overall satisfaction with MSPP experience	4.5	2

Qualitative Results

In addition to the quantitative questions in the post-survey, the students were asked to expand on their experience by answering six open-ended questions. The overwhelming response to the MSPP experience was positive, with student responses stating:

- I think the experience itself was nice because it was something new and different for me.
- It also led to working on something that was real and practical rather than just typical classwork.
- It made our class and project more realistic which helped everyone stay engaged and wanting to learn more.
- It was rewarding to help the community with something that revolved around our major.

Students were also asked to reflect on the valuable takeaways from the experience. Responses generated referred to the curriculum (“That we were able to help our community as a part of our curriculum”) and the sense that what they were doing was going to affect others in a positive manner (“I just enjoyed working on something that had an actual effect”).

The primary course objective was for students to learn the steps of designing a research project, and students generally reported that they met the objectives by creating a hypothetical research project that could be implemented at a community nonprofit. The broad goal was to develop a project that would increase use of the nonprofit’s fitness center and include monetary funding. One group member exemplified this by stating, “Our plan was to use advertisement to bring more people into the organization’s fitness facility . . . The purpose was to teach people about the benefits of physical fitness and health.” Another mentioned, “Our project study allowed us to do research on extrinsic and intrinsic group workout motivation and apply what we

learned from those concepts to create positive ways to get members of the [nonprofit] to utilize the facility.”

Of all qualitative responses, two students responded “no” to the question of whether their experience with the MSPP would change their involvement in the community. Some students stated that they wanted to increase their involvement, as one student stated, “I do plan on making changes related to my community involvement- I plan on getting involved in a wider variety of volunteer opportunities and potentially completing research to get involved in the community more.” And many students reported an increased awareness of philanthropy and opportunities to impact their communities:

- Philanthropy is something that gets looked over quite a bit, but it really has such a huge impact. Not only does it have a large impact of the organization we’re assisting but on us and our lives, and the way we see things as.
- Philanthropy taught me how to look at a situation and decipher what the best way is to help them become better at this time in their lives.
- Again, problem solving and being in a group and budgeting the project. I have never done anything like this so it was super neat to do and experience.
- Philanthropy can come in many forms, and there is just about any organization you can get involved in that can reach a community or project you may be passionate about.
- I think at the very least though, I’m aware of issues in my community as well as various non-profits that work with any topic or scale of issue that may exist in our area or beyond.

Student Course Evaluations

Following the end of the course, students were invited to complete anonymous standardized evaluations. In response to the

item, “Course activities, readings, lectures, and/or assignments improved my understanding of the course material,” most students stated that they either agree (40%) or strongly agree (40%). For the item, “Course activities, assignments, projects, and/or papers helped me to develop skills I can use inside and outside of the classroom,” most students stated that they strongly agree (70%). Last, students were asked to provide open-ended answers to the question, “What are one or two things that most helped you learn in this course?” Student responses centered around the benefits of applying their learned skills in a hands-on manner, stating: “The hands-on project style I really liked and found it to have a lot of benefits” and “The opportunity to apply my skills in such a big project was a great experience.”

THE FUTURE OF SL IN EXERCISE SCIENCE

Active learning through high impact educational practices improves student learning (Kuh et al., 2013). An aspect of quality learning environments is those that “facilitate application/practice opportunities in authentic or simulated practice situations” (Smith & Baik, 2021, p.1704). Service learning is the high-impact, educational practice that was incorporated in this case study and provided hands-on learning for students. Authentic learning experiences, like implementing community projects as a way to achieve course learning objectives, often lead to increased student self-efficacy for their professional practice (Cleveland & Peterson, 2022). That is, the more times a student completes a SL classroom experience, the higher their self-efficacy is for that learning component. Adding SL to a research course adds applied interpersonal experiences which provide opportunities for students to hone their critical thinking, communication, and leadership skills in addition to the research process alone. The benefits of the SL

experience reach beyond the conclusion of the semester for both students and the community benefactor (Olberding & Hacker, 2016).

The case study detailed above provides evidence for the inclusion of a SL project as a vehicle for delivering the SLOs in an exercise science undergraduate research course. The primary course objective (design a research project) and MSPP objectives were met. It is important to consider the success of the SL inclusion beyond the viewpoint of the instructor (Currie-Mueller & Littlefield, 2018). Based on the student responses, MSPP SL objectives that included recognizing and discovering philanthropic processes, identifying social problems, and reframing interests/intentions/behaviors related to social responsibility were met. Students generally agreed that by the end of the course, they had a better understanding of community needs, were more aware of nonprofits, and had increased awareness and knowledge of philanthropy, in addition to having written all aspects of a research proposal and presentation.

As a result of the SL projects, the community nonprofit partner was awarded \$4,000 in grant funding over the course of the two semesters that the exercise science class partnered with the MSPP. The funds, as voted on by the students, were used to provide the agency with equipment that would ultimately promote physical activity among the population that the nonprofit serves. The winning groups provided a compelling case for the breadth of impact using only a one-time \$2,000 donation. Because the nonprofit partner did not have the capacity to hire an in-house exercise specialist, and the funding did not include implementation beyond the semester, the students chose to integrate technology at the facility. Specifically, iPads, TVs, and wearable fitness tracking devices were delivered to the nonprofit in order to stream exercise programming for the nonprofit’s community members. The short-term nature of the project does present a challenge to long-term impact, in that active

involvement of the instructor following the conclusion of the semester is required.

Although the MSPP provided an overall positive experience, the inclusion is not without its challenges. One issue that occurred with the class partner nonprofit was that there was high turnover in their administration, leading to broken communication between the instructor and the nonprofit. This caused issues with the collection of the needs assessment survey data for the students. One student stated, “We didn’t receive the feedback we needed from the facility to structure our study correctly,” and another, “Run very well. Only thing that was hard with this class was getting the data we needed about the fitness facility usage” in reference to their needs assessment. They had planned to collect data from both the nonprofit staff and community members, and only received returned surveys from the staff, causing them to need to pivot in their research project development. This pivot was used as a learning opportunity about the difficulties in managing surveys and collecting responses in the community, though some students maintained their negative disposition toward modifying their project throughout the semester.

Because the instructor may act as a mediator between the students and the nonprofit, there is added work on behalf of the instructor to maintain a seamless and structured experience for the students. The MSPP funding is dispersed following the conclusion of the semester, which requires the instructor to maintain contact with the nonprofit and oversee implementation of the final products rather than the students. Last, the nature of the civic engagement portion of the class requires that the students get out of the classroom and into the community. This can create challenges for students who do not have reliable transportation or who have other responsibilities that interfere with the timing of community visits (e.g., athletics, work, childcare, etc). These challenges are not unique to this author’s experience (Couillou et

al., 2023) and thus it is recommended that instructors planning to implement SL into their course plan for the following: 1) Create a plan for execution of the funding implementation *during* the semester rather than waiting until the conclusion of the semester, 2) Plan to follow-up personally with the nonprofit partner at various intervals following the conclusion of the semester to ensure smooth project implementation, and 3) Identify a “Plan B” should the nonprofit partner fall through on their commitments for communication, participation, and/or data.

Aside from a few challenges, the benefits of SL in exercise science curriculum cannot be understated. As higher education continues to struggle to find its way in an ever-changing landscape, it is vital to incorporate student-tested strategies in the classroom. Research has shown that engagement specifically in the MSPP at Northern Kentucky University increases student success markers, like retention and graduation rates (Larson et al., 2020). This continued engagement is important considering students enrolled in this course will often pursue graduate education. Additionally, the students in this course will likely go on to pursue careers in the helping professions (e.g., physical therapy, medical school, health coaching, etc.), and providing opportunities for volunteerism prior to entering their careers can lead to students using their professional skills in charitable settings while working in their vocational field (Olberding, 2012).

REFERENCES


- Cleveland, K. M., & Peterson, S. A. (2022). Service learning and self-efficacy in exercise science: Outcomes of a community fitness training program involving undergraduate Exercise Science students. *Advances in Physiology Education, 46*(4), 621–629.
<https://doi.org/10.1152/advan.00058.2022>
- Couillou, R. J., McGee, B. L., Carr, A. S., & Lamberth, T. (2023). Pandemic partnerships: Community/university experiences with community-based learning in the COVID-19 era. *Journal of Experiential Education, 46*(3), 319–341.
<https://doi.org/10.1177/10538259221145935>
- Currie-Mueller, J-L., & Littlefield, R. (2018). Embracing service-learning opportunities: Student perceptions of service-learning as an aid to effectively learn course material. *Journal of the Scholarship of Teaching and Learning, 18*(1), 25–42.
<https://doi.org/10.14434/jsotvl.v18il.21356>
- Ferrante, J. (2006). Student philanthropy as a vehicle for teaching the subject matter. In J. L. Perry & S. G. Jones (Eds.), *Quick hits for educating citizens*. Indiana University Press.
- Johnson, L. G., & Baker, B. L. (2015). Implementing service-learning through a community-based fitness program. *Kinesiology Review, 4*(4), 398–402.
- Kuh, G. D., O'Donnell, K., & Reed, S. (2013). Ensuring quality and taking high-impact practices to scale. *Peer Review, 15*(2), 32–33.
- Larson, K., Downing, M., Nolan, J., & Neikirk, M. (2020). High impact practices through experiential student philanthropy: A case study of the Mayerson Student Philanthropy Project and academic success at Northern Kentucky University. *Journal of College Student Retention: Research, Theory & Practice, 24*(3), 832–855.
<https://doi.org/10.1177/1521025120952083>
- McDonald, D., & Olberding, J. C. (2012). Learning by giving: A quasi-experimental study of student philanthropy in criminal justice education. *Journal of Criminal Justice Education, 23*(3), 307–335.
<https://doi.org/10.1080/10511253.2011.604339>
- Millisor, J., & Olberding, J. C. (2009). Student philanthropy in colleges and universities. *Academic Exchange Quarterly, 13*(4), 11–16.
- O, J., Sherwood, J. J., & Yingling, V. R. (2017). Undergraduate research and service-learning programs in a kinesiology program at a teaching university. *Quest, 69*(3), 331–347.
<https://doi.org/10.1080/00336297.2016.1226908>
- Olberding, J. C. (2012). Does student philanthropy work? A study of long-term effects of the “Learning by Giving” approach. *Innovative Higher Education, 37*(2), 71–87.
- Olberding, J., & Hacker, W. (2016). Does the “service” in service learning go beyond the academic session? Assessing longer term impacts of nonprofit classes on community partners. *Journal of Nonprofit Education and Leadership, 6*(1).
<https://doi.org/10.18666/JNEL-2016-V6-I1-7201>

Santiago, J. A., Kim, M., Pasquini, E., & Roper, E. A. (2020). Kinesiology students' experiences in a service-learning project for children with disabilities. *Physical Educator*, 77(2), 183–207.
<https://doi.org/10.18666/TPE-2020-V77-I2-9829>

Smith, C. D., & Baik, C. (2021). High-impact teaching practices in higher education: A best evidence review. *Studies in Higher Education*, 46(8), 1696–1713.
<https://doi.org/10.1080/03075079.2019.1698539>

Wilson, W. J., Theriot, E. A., Richards, K. A. R., Trad, A. M., & Schrinier, L. (2021). Experiential learning and inclusion through service-learning: Recommendations for kinesiology to support students and people with impairments. *Quest*, 73(3), 245–263.

AUTHOR NOTE

Jennifer Lape Kaiser 
<https://orcid.org/0009-0004-8755-9639>
 We have no known conflict of interest to disclose.
 *Correspondence concerning this article should be addressed to Jennifer Lape Kaiser, 100 Nuun Dr, HC 206M, Highland Heights, KY 41076. Email: Kaiserj12@nku.edu

AUTHOR BIOGRAPHIES

***Dr. Jennifer Lape Kaiser** is an Assistant Professor of Exercise Science at Northern Kentucky University. She is an active educator, researcher, and a licensed mental health practitioner.

Address	100 Nuun Dr, HC206M, Highland Heights, KY 41076
Email	kaiserj12@nku.edu
Phone	859-572-1982

Madison Skaggs is a senior undergraduate student in the Exercise Science program at Northern Kentucky University. She is planning to pursue a Doctorate of Physical Therapy and is currently employed as a Director at a gymnastics gym.

Address	100 Nuun Dr, HC206, Highland Heights, KY 41076
Email	skaggs3@mymail.nku.edu
Phone	859-572-1982