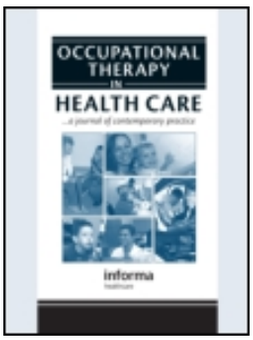

Occupational Therapy In Health Care

ISSN: 0738-0577 (Print) 1541-3098 (Online) Journal homepage: https://www.tandfonline.com/loi/iohc20

Capstone Projects as Scholarship of Application in Entry-Level Occupational Therapy Education

Tracy Jirikowic, Jennifer S. Pitonyak, Beth Rollinger, Donald Fogelberg, Tracy M. Mroz & Janet M. Powell

To cite this article: Tracy Jirikowic, Jennifer S. Pitonyak, Beth Rollinger, Donald Fogelberg, Tracy M. Mroz & Janet M. Powell (2015) Capstone Projects as Scholarship of Application in Entry-Level Occupational Therapy Education, Occupational Therapy In Health Care, 29:2, 214-222, DOI: 10.3109/07380577.2015.1017788

To link to this article: https://doi.org/10.3109/07380577.2015.1017788

Published online: 30 Mar 2015.

Occupational Therapy In Health Care, 29(2):214–222, 2015

Available online at http://informahealthcare.com/othc
DOI: 10.3109/07380577.2015.1017788

informa
healthcare

Capstone Projects as Scholarship of Application in Entry-Level Occupational Therapy Education

Tracy Jirikowic, Jennifer S. Pitonyak, Beth Rollinger, Donald Fogelberg, Tracy M. Mroz, & Janet M. Powell

Division of Occupational Therapy, University of Washington, Seattle, WA, USA

ABSTRACT. Capstone projects are integrative student learning experiences used in higher education. This article describes the value and merit of capstone projects as scholarship of application within an entry-level occupational therapy education program. The capstone process is outlined and roles and responsibilities of student, faculty members, and community mentors described. Summative curricular evaluation from 5 years of capstone projects indicated that project characteristics and objectives aligned with the theory and desired outcomes of applied scholarship in the areas of student learning, faculty practice and development, and community service. Challenges identified can further inform development of the capstone experience in occupational therapy education.

KEYWORDS. Clinical reasoning, Occupational therapy education, Pedagogy, Scholarship

Comprehensive, applied learning opportunities have been described historically and remain relevant to contemporary occupational therapy curricula. Reilly (1958) described the need to develop a new occupational therapy curriculum to accommodate the profession's growing knowledge base. She suggested that "activity" be the guiding philosophy of this new curriculum, and that its content should include medical science, media, and knowledge of the treatment process. As occupational therapy education transitioned to the postbaccalaureate degree level, programs developed and evaluated new curricula with a particular focus on conceptual learning that is applied in practice (Wood et al., 2000). The need to include content on business and management, consultation, health care policy, and research was identified, as well as the need to increase scholarship to the expectations of the degree level (Hilton, 2005). Thus, methods and types of scholarship needed exploration.

Address Correspondence to: Tracy Jirikowic, University of Washington, Division of Occupational Therapy, Box 356490, Seattle, WA 98195, USA (E-mail: tracyj@uw.edu).

(Received 25 August 2014; accepted 07 February 2015)

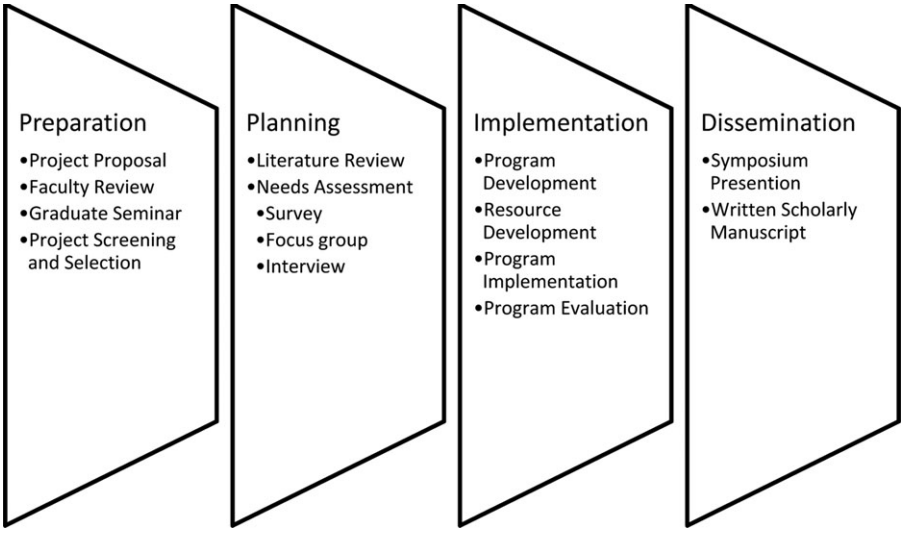

FIGURE 1. Capstone process overview.

SCHOLARSHIP OF APPLICATION

Boyer (1990) described four types of scholarship-discovery, integration, application, and teaching and learning, and the value of each in higher education. In contrast to the scholarships of discovery and integration, which reflect more traditional institutional values related to research and synthesis of knowledge, the scholarship of application requires engagement with society with the goal of applying knowledge to help individuals and institutions. Scholarship of application merges scholarly activities with community service in a search for solutions to contemporary societal issues. This collaboration among academic institutions and community partners allows for knowledge and resource sharing with mutually beneficial outcomes and helps disciplines maintain a relationship between theory and practice (Boyer, 1990; Jacelon, Donoghue, & Breslin, 2010).

Literature describing capstone education processes identifies scholarly requirements that align with occupational therapy education accreditation standards (Brown & Benson, 2005; Tracey, Chatervert, Lake, & Wilson, 2008). Although the pedagogy used in capstone education varies, the learning experience often requires students to engage in extensive review and integration of literature, collect data, and evaluate the project in the form of an extended paper (McKinney & Busher, 2011). Completion of a needs assessment, student evaluation of the project, and student dissemination and defense of their work are additional components of capstone education identified in the literature (Brown & Benson, 2005; Tracey et al., 2008). These learning experiences are consistent with current Accreditation Council of Occupational Therapy Education (ACOTE) requirements for master-level programs (ACOTE, 2011). Figure 1 illustrates how these key components are integrated into our capstone project process through phases of *preparation, planning*, *implementation*, and *dissemination*.

In our entry-level master of occupational therapy (MOT) professional program, student capstone projects consist of three quarters of community-based, experiential learning that occur during the final year of our seven quarter academic program. The projects are carried out in groups of two to four students in collaboration with a faculty mentor and a community mentor. Projects are completed in both traditional settings with existing occupational therapy services and community-based settings without occupational therapy providers.

Prior to the three quarter student experience, several steps occur to identify and select the capstone projects in the *preparation* phase. First, clinical and community sites are invited to submit proposals either independently or in collaboration with faculty. Proposals are then reviewed by faculty members for scholarly merit and feasibility. Occasionally, a decision is made not to move forward with a project, (e.g., if it does not meet the project objectives or is unlikely to be completed within the allotted time). Finally, students are introduced to the capstone project process and proposals in a graduate seminar where they review and rank their preferred proposals. Students are assigned to a final project based on their preferences, along with consideration of faculty expertise and workload.

Consistent with capstone education theory, our capstone experience is grounded in a strong learner-centered philosophy in that students take an active role through all subsequent project phases (Vaidean, Vansal, Moore, & Feldman, 2013). In the *planning* phase, students engage in an extensive review and integration of the literature and must locate and evaluate relevant evidence to support the decision-making process. A systematic needs assessment is also completed to determine needs of the individual (s), organization, or population to be served. This integrative learning process guides evidence-based decision making for project development and implementation and requires students to think critically about how needs fit within the domain of occupational therapy.

The *implementation* phase of the project fosters critical thinking and clinical reasoning in community-based contexts. This phase consists of dynamic, real world "doing" congruent with the overarching philosophy of scholarship of application that aims to create opportunities to learn, seek, and acquire new levels of understanding while engaging with the community (Boyer, 1990; Jahangiri & Mucciolo, 2011). Learning activities completed within the *implementation* phase of the project include, but are not limited to, resource development; program development; implementation that may include training and/or service delivery to individuals, groups or organizations; and program evaluation.

Dissemination to fellow students, faculty members, community partners, or disciplinary experts is a common component of capstone projects (Brown & Benson, 2005; Tracey et al., 2008). The *dissemination* phase of our capstone project model requires that students complete an oral presentation in a professional symposium to peers, faculty, community clinicians, and consumers. Students also complete a written paper that includes a compilation of the literature review, needs assessment, and a summative scholarly manuscript.

Instructional methods that support student learning and development throughout the capstone experience include provision of didactic content in a graduate seminar as well as mentoring from faculty and community practitioners. The graduate

seminar includes instruction in the academic aspects of the capstone process (e.g., literature review, needs assessment, scientific, and nontechnical writing). Faculty members and community mentors provide shared supervision during planning, implementation, and dissemination phases. Mentorship supports the development of group process, guides project development and implementation, shapes the professionalism of student interactions with consumers and stakeholders, and assists with written and oral scholarship. While not a program requirement, students are also encouraged and offered faculty mentorship to pursue professional presentations at state or national conferences and/or submit a manuscript to practice-oriented or consumer publications.

MEASURING OUTCOMES

To examine student, faculty member, and community outcomes, we completed a retrospective content review of projects completed during the 2010–2014 academic years. This 5-year time period was selected for analysis because it followed a planned transition to community-based projects using program development methods from a previous process that included both community program development and research-based projects.

Thirty-nine projects were completed over this five year period. In the first stage of the analysis, the project abstracts were reviewed and categorized by topic, setting, and population served. Initial groupings were discussed among the author group and agreement was reached on the final categories. As seen in Table 1, project topics were diverse and multiple areas of occupation were addressed including activities of daily living, instrumental activities of daily living, work, education, leisure, and social participation. Project topics included established occupational therapy interventions such as feeding, splinting, and assistive technology, as well as emerging areas of practice including a fitness group for youth with obesity, sensory supports in adult mental health, fall prevention for community-dwelling older adults, and community volunteerism for survivors of traumatic brain injury (TBI).

Settings

Projects were implemented in traditional practice settings such as schools or early intervention programs ($n = 9$, 23%), hospitals or clinics ($n = 12$, 31%), skilled nursing facilities or adult day centers ($n = 5$, 13%), and nontraditional community-based settings or other organizations ($n = 13$, 33%) such as a public museum/science center and a TBI clubhouse. The community-based settings reflect efforts to reach underserved populations, introduce students to emerging areas of practice, and expand the role and visibility of occupational therapy in the greater community. While the majority of projects were developed for or implemented with individuals or groups (e.g., adolescent leisure groups, older adult activity-based groups), a number of projects provided service to an organization or population (e.g., development of a sensory room for an inpatient psychiatric facility, legislative advocacy in partnership with the state occupational therapy association). Through these diverse projects students were involved with or introduced to occupational therapy practitioner roles as consultant, educator, manager, researcher, and

Table 1. Capstone Projects by Practice Area and Topic

Practice Area and Topic	*N* (%)
Children and Youth	20 (51)
Implementing a Behavior Regulation Group for Children with Fetal Alcohol Spectrum Disorders Development of Early Intervention Programming for Toddlers with Autism Spectrum Disorders (2) Creating a Visual Cookbook: Facilitating Participation for Children with Special Needs Protocol Development for Orthopedic Complications (Brachial Plexus and Clubfoot) in the NICU Group Interventions for Children with Motor Difficulties (2) Sensory Processing: Development of Parent Education Materials Enhancing Family Centered Supports in an Intensive Feeding Program Constraint Induced Movement Therapy in Early Intervention Exploring iPad Learning Apps in Early Childhood Education Classrooms Using E-books to Create Shared Learning Opportunities for Children with Differing Abilities Transitioning from Nasogastric Tube Feeding to Oral Feeding in Children with Cancer: Program Evaluation Development of Inclusive Programming at a Community Science Center (2) Leisure Exploration and Leisure Group Development for Adolescents with Developmental Disabilities (2) Childhood Occupations: Creating an Educational Video Resource Developing and Implementing an Inclusive Soccer Program for Middle School Students Safe Youth Transportation: Consumer and Professional Resource Development	
Rehabilitation, Disability, and Participation	6 (15)
Developing a Training Curriculum for Traumatic Brain Injury Support Group Facilitators Creation of a Traumatic Brain Injury Support Group Manual Development of Supported Community Volunteering Program for Adults with Traumatic Brain Injury Interdisciplinary Approach to Wheelchair Seating and Positioning for Older Adults Instructional Videos for Creating Custom Orthoses Social and Information Networking for Individuals with High Level Spinal Cord Injury	
Productive Aging	3 (8)
Designing a Comprehensive Activity Program for Residents with Dementia Community-Building Through Card Making: Facilitating Engagement Among Nursing Home Residents Fostering Community for Older Adults through Gardening	
Mental Health	4 (10)
Development of a Sensory Modulation Room for Adults in a Mental Health Setting Implementing a Sensory Approach to Patient Treatment in Mental Health Setting Integration of Sensory Modalities on a Mental Health Unit Medication Management in Acute Mental Health	
Health and Wellness	3 (8)
Redesigning a Fall Prevention Class for Community Dwelling Older Adults Fit Club: A Three-pronged Approach for Childhood Obesity Developing Mixed Population Activity Groups in an Adult Day Center	
Advocacy and Policy	3 (8)
Occupational Therapy Advocacy Assistive Technology in the Schools Increasing Access to Evidence-Based Resources in Washington State	

advocate, thus meeting accreditation standards that develop student skills beyond those required of direct care providers (ACOTE, 2011).

Students

Responses from student exit surveys from 2010 to 2014 academic years were reviewed to evaluate student perceptions of the capstone project within the curriculum. The exit survey was sent to all students following completion of their academic coursework and returned prior to or at the beginning of Level II fieldwork. Students were asked open-ended questions about the strengths of the capstone projects and areas for improvement (2012–2014), and how the projects contributed to their learning (2010–2011). The exit surveys were completed by an average of 60% of

students across the five academic years. Responses were collated and themes identified for each year by an independent consultant from the university's teaching and learning resource center. This allowed for maintenance of the confidentiality of the identity of individual respondents.

Of the students who completed the survey, 39% commented that community involvement and service were strengths of the capstone experience. Other reported strengths that contributed to student learning were "hands on" practical learning opportunities (22%), the application and use of evidence in the decision making process (19%) and the development of professional dissemination and leadership skills (14%).

The most frequently reported challenge and suggested area for improvement involved project advising and supervision. Thirty-three percent of students who completed the survey reported challenges with project structure, expectations, and supervision. Student perceptions about the overall project process in relation to factors such as project choice, group assignments, and autonomy were mixed. Fifteen percent of students (15%) commented positively on the overall process and felt ownership of the project, whereas another 15% of respondents indicated more choice or autonomy would have improved their experience.

Students also had differing opinions on the value of working in groups. Twelve percent of student respondents commented that the group process helped them develop teamwork skills that enhanced learning, whereas others (7%) reported that group dynamics and factors such as workload distribution detracted from their learning. Other noted areas for improvement were more time to complete the project (8%) and desire for direct client interactions among some of the students (7%) who did not have this opportunity within their capstone experience.

Project dissemination was also examined as an outcome. Our capstone project model (literature review, written manuscript, and abstract) positions the students to disseminate their work in a format consistent with professional conference presentation and publication. During this five year time period, 26% ($n = 10$) of the capstone projects were disseminated at national or state conferences as posters or presentations and 13% ($n = 5$) of the projects were disseminated in publications [e.g., American Occupational Therapy Association Special Interest Section Quarterly newsletter ($n = 2$), facility newsletters ($n = 2$), or peer-reviewed journal ($n = 1$)].

Faculty Members

Capstone outcomes have also benefitted faculty members. For example, one faculty member was invited to participate in a multisite, international capacity-building collaboration (e.g., accessible and sensory friendly museum and theater experiences) based on expertise developed through mentoring capstone projects. Projects have also created opportunities for scholarship and research through advanced learning activities with postprofessional doctoral students (e.g., outcome measurement and occupational therapy consultation roles). Other potential faculty member benefits that have been described in the literature include opportunities to maintain competency in practice and share expertise with the community (Bosold & Darnell, 2012; Jacelon et al., 2010).

Faculty members and community stakeholders share other benefits of the capstone experience. Shared supervision and the exchange of knowledge between faculty and community mentors can advance evidence-based practice and increase awareness of the role of occupational therapy at sites where services do not currently exist (Bosold & Darnell, 2012; Maritz, Thielman, & Campolo, 2011). Two examples illustrate how community stakeholders were able to expand or sustain programs developed through capstone projects. One mentor who supervised three consecutive capstone projects that focused on the use of sensory modalities in an in-patient psychiatric setting recently received grant funding to expand the use of these modalities in the facility. As another example, a TBI clubhouse established volunteer positions for prospective occupational therapy students as a direct result of the capstone partnership.

Potential Outcomes

We also see potential long-term benefits to postsecondary institutions, the occupational therapy profession, and society. Our projects served to meet the diverse occupational needs of individuals, organizations, and populations across the lifespan in both traditional and emerging settings. This promotes both occupational therapy and institutional visibility and illustrates potential benefits to society through the service provided by the occupational therapy students. Efforts to reach underserved or disenfranchised groups or populations also promote occupational justice and are congruent with institutional service goals (Townsend, 2003).

Challenges and Limitations

Challenges with our capstone process were revealed in relation to shared faculty and community student mentorship and our group model. The use of groups is based on our experience that multiple students per project are needed to manage the scope and depth of the project activities, and that groups provide a more efficient model for faculty advising and workload. In response to student feedback, we recently added a reflective process in which students assess their own professional behaviors and role as a team member. This process helps students proactively identify and address issues with group dynamics under faculty mentorship. Effective strategies to supervise students and ways to facilitate cohesion between academic requirements and community expectations given the diversity of project settings and mentor backgrounds are issues that require ongoing reflection and evaluation within our model. Helping students manage these tensions represents an opportunity to mentor professional communication competencies (Tartas & Mirza, 2007).

The evaluation of our capstone project outcomes has limitations. Information was gathered and reviewed as a part of the summative curricular evaluation process and, therefore, the methodology used lacked the rigor of prospective research. Our mutually exclusive categorization of capstone projects by practice area, topic, and setting illustrates the breadth of issues, populations and programs addressed but lack the capacity to fully communicate the depth, richness, and complexity of occupational performance embedded within each individual project. For example, a number of projects categorized under children and youth encompassed elements of mental health promotion, community participation, and/or advocacy. Finally, our

measure of student perceptions of the capstone process is subject to nonresponse bias.

Several opportunities for future program development and pedagogical inquiry exist. Surveying program graduates after several years of work experience could identify additional benefits and needs related to the value of the capstone project within the MOT program. In addition, planned and systematic follow-up with community mentors or practitioners at respective program sites could help identify strategies to improve the consistency of expectations and supervision for students as well as better examine sustainability, long-term outcomes, and societal impact. Finally, qualitative research methods that systematically explore student, faculty, and community member capstone process experiences and perceptions would also contribute to our understanding of applied scholarship as a culminating learning experience within occupational therapy education programs as well as help to bridge gaps between community and academic expectations.

In summary, we described our capstone process as scholarship of application as it aligned with capstone education theory and current occupational therapy education master-level accreditation standards. Our evaluative process revealed both strengths and limitations of our capstone model. Benefits to student, faculty members, and community stakeholders demonstrate how capstone projects enable occupational therapy graduate programs to meet teaching, service, and scholarship expectations, as well as create dynamic teaching and learning environments that address community needs and advance the occupational therapy profession.

ACKNOWLEDGMENTS

The authors would like to acknowledge and thank Elizabeth Kanny, PhD, OTR/L, FAOTA; Jean Dietz, PhD, OTR/L, FAOTA; Brian Dudgeon, PhD, OTR/L; and Joyce Engel, PhD, OTR/L, FAOTA for their contributions to conceptualizing and supervising MOT graduate capstone projects while faculty at the University of Washington. The authors also appreciate the support of Karen Freisam, Senior Consultant at the University of Washington Center for Teaching and Learning for her assistance with student evaluations and feedback.

***Declaration of interest*:** The authors report no conflicts of interest relevant to the content of this article. The authors alone are responsible for the content and writing of the paper.

ABOUT THE AUTHORS

Tracy Jirikowic, Jennifer S. Pitonyak, Beth Rollinger, Donald Fogelberg, Tracy M. Mroz, and Janet M. Powell are faculty members of the Division of Occupational Therapy, University of Washington, Seattle, Washington.

REFERENCES

Accreditation Council for Occupational Therapy Education. (2011). *Standards and Interpretive Guide* (effective July 31, 2013). Retrieved from http://www.aota.org/-/media/Corporate/

Files/EducationCareers/Accredit/Draft-Standards/2011-Standards-and-Interpretive-Guide-August-2013.pdf.
Bosold C, & Darnell M. (2012). Faculty practice: Is it scholarly activity? *Journal of Professional Nursing*, *28*(2), 90–95.
Brown AH, & Benson B. (2005). Making sense of the capstone process: Reflections from the front line. *Education*, *125*(4), 674–692.
Boyer EL. (1990). Scholarship reconsidered. *Priorities of the Professoriate*. Carnegie Foundation for the Advancement of Teaching. Jossey Bass, San Fransicsco CA.
Hilton C. (2005). The evolving postbaccalaureate entry: Analysis of occupational therapy entry-level Master's degree in the United States. *Occupational Therapy in Healthcare*, *19*(3), 51–71.
Jacelon CS, Donoghue LC, & Breslin E. (2010). Scholar in residence: An innovative application of the scholarship of engagement. *Journal of Professional Nursing*, *26*(1), 61–66.
Jahangiri L, & Mucciolo TW. (2011). Toward a model of institutional scholarship in health professions education. *Journal of Dental Education*, *75*(12), 1569–1576.
McKinney K, & Busher M. (2011). The sociology research experience capstone course at three institutions. *Teaching Sociology*, *39*(3), 290–302.
Maritz CA, Thielman G, & Campolo M. (2011). Using a capstone project to prepare students to become evidence-based practitioners. *Journal of Faculty Development*, 25(2), 12–17.
Reilly M. (1958). An occupational therapy curriculum for 1965. *American Journal of Occupational Therapy*, *12*, 293–299.
Tracey MW, Chatervert C, Lake K, & Wilson R. (2008). Real world projects in an advanced instructional design course. *Tech Trends*, *52*(4), 24–29.
Tartas V, & Mirza NM. (2007). Rethinking collaborative learning through participation in an interdisciplinary research project: Tensions and negotiations as key points in knowledge production. *Integrative Physiological & Behavioral Science*, *41*(2), 154–168.
Townsend E. (2003). Reflections on power and justice in enabling occupation. *Canadian Journal of Occupational Therapy*, *70*, 74–87.
Vaidean GD, Vansal SS, Moore RJ, & Feldman S. (2013). Student scientific inquiry in the core curriculum. *American Journal of Pharmaceutical Education*, *77*(8), 1–9.
Wood W, Nielson C, Humphry R, Coppola, S, Baranek, G, & Rourk, J. (2000). A curricular renaissance: Graduate education centered on occupation. *American Journal of Occupational Therapy*, *54*, 586–597.