Evaluating the Professional Transformation from a Doctoral Capstone Experience

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Abstract

Mezirow's transformational learning is a framework that is used to guide student learning and development, but is not frequently studied in allied health education programs. The scholarly capstone, a common academic requirement among various allied health doctoral-level programs, is traditionally defined as an immersive learning experience, along with completion of a scholarly project under mentorship. Due to the inherent nature of the capstone process, the student is required to engage in self-reflection, self-examination, and exhibit self-directedness. Faculty in allied health programs can benefit from using transformative learning as a theoretical framework for designing and evaluating these experiential learning endeavors.

The purpose of this qualitative study was to measure the personal and professional transformation of occupational therapy students following a doctoral capstone experience (DCE), a required 14-week experience in entry-level occupational therapy doctorate programs. Data was collected via pre- and post-DCE interviews and journal entries which mirrored Mezirow's stages of transformational learning.

This study provides insight to faculty regarding the importance of self-reflection to impact both personal and professional growth in allied health doctoral students.

Keywords: doctoral capstone, transformative learning, occupational therapy

Introduction

A capstone (or comprehensive project) is a requirement within many professional degree programs. A capstone traditionally represents a culmination of one's doctoral studies with an evidenced-based, scholarly project. It is an opportunity for the doctoral student to translate their acquired knowledge (usually reflecting a specialization or area of interest) into practice and potentially lay the groundwork for future scholarship. Although specific requirements will vary across institutions, a capstone typically requires the doctoral student to engage in a self-directed practice experience, with the support of faculty and/or external advisors/mentors, as appropriate. Differing from a dissertation, which tends to require a doctoral candidate to produce new knowledge, and is heavily research and scientific focused, a capstone is more focused on the application of knowledge and dissemination of evidence into practice (DeIuliis & Bednarski, 2019).

In occupational therapy education, the accreditation council defines the doctoral capstone as consisting of two distinct parts: the capstone project and the capstone experience. The capstone project is directly aligned with the capstone experience and should be designed to help the doctoral student synthesize and apply knowledge gained through a 14-week capstone experience (Accreditation Council

for Occupational Therapy Education [ACOTE], 2018). While the first occupational therapy doctoral program was established in 1999 and ACOTE has been regulating entry-level occupational therapy doctoral education since 2006, there is limited data being generated by the profession to support the value of the doctoral capstone. Currently, 82 occupational therapy programs in the United States offer an entry-level doctoral degree with data suggesting that nearly 33% of existing masters level OT programs have begun the transition to the doctoral level (ACOTE, 2019). With increasing numbers of students completing the doctoral capstone, it is important for the profession to explore the impact of this experience on student growth. Having a broader understanding of how the doctoral capstone influences individual students, will help contribute to the advancement of occupational therapy education and the profession as a whole (Molitor & Nissen, 2018).

The purpose of this study was to measure the personal and professional transformation of occupational therapy students following a doctoral capstone experience. This research intends to expand the discussion around transformational learning to include the allied health professions, where literature is less abundant than in other fields. Faculty in allied health programs can benefit from using transformative learning as a theoretical framework for designing and evaluating students' experiential learning. Understanding the impact of the doctoral capstone on the development of the student is vital for students and faculty alike, as doctoral programs prepare future occupational therapy practitioners to meet the American Occupational Therapy Association's Vision 2025 (American Occupational Therapy Association, 2016).

Literature Review

Experiential learning is a crucial component of many allied health professional programs, as well other programs such as education and music. In occupational therapy literature, the most well-documented transformations for students occur through experiential learning, particularly during placements where self-regulation and role-emerging practice are emphasized (Clarke, de Visser, Martin, & Sadlo, 2014; Lyons & Ziviani, 1995; Santalucia & Johnson, 2010). In entry-level occupational therapy doctoral (OTD) curricula, a 14-week doctoral capstone experience (DCE) is the core experiential learning opportunity during the final year of studies. The DCE is an integral part of entry-level occupational therapy (OT) clinical doctorate curricula as it affords OT students the opportunity to positively impact themselves, their profession, and their communities while gaining in-depth skills in a particular focus area. The transformative learning model provides a valuable theoretical framework for the DCE, in guiding how each student interprets the meaning of their experience (Mezirow, 2000).

The DCE differs from prior experiential learning in occupational therapy in that the goal is to provide in-depth exposure in a concentrated area of focus, such as clinical practice skills, research skills, administration, leadership, program and policy development, advocacy, education, or theory development (ACOTE, 2018). The DCE is a student-driven experience, which occurs after the completion of traditional level II fieldwork (FW). Level II FW traditionally occurs within an apprenticeship model of supervision, with more direct contact and feedback from the supervising preceptor (Hanson & DeIuliis, 2015); however, an essential difference from the level II FW expectations is that the DCE is to be a mentored experience, rather than a supervised one. Furthermore, OT doctoral students must complete preparatory activities such as a needs assessment, literature review, and devising an evaluation plan to drive the capstone project prior to the onset of the DCE (ACOTE, 2018). These expectations require that the students possess both a strong personal and professional identity (Recigno et al., 2020), which often challenges much of what they have previously experienced during FW and other experiential learning opportunities. All of these changes and advancing requirements often predispose students to face a disorienting dilemma as they prepare for their capstone experience. By understanding doctoral students' experiences in the DCE, capstone coordinators and occupational therapy faculty can learn to better prepare and place students in settings that meet the increasing demands of the profession. Currently, there is little research on understanding the potential benefits of the DCE, particularly as it continues to grow as the point of entry for the profession.

Transformative learning includes self-reflection (Dubouloz, 2014), which is also an essential tool in doctoral-level education (Brookfield, 2015). Educators working with adult learners can foster autonomous thinking and learning through critical reflection of real-life experiences. In order to facilitate transformative learning, educators must help learners become aware and critical of their own and others' assumptions. "Transformative learning develops autonomous thinking" (Mezirow, 1997, p. 5). This type of thinking supports the individual in self-regulating their learning or controlling their own actions to optimize their learning. Due to the increased rigor and self-regulation required for this advanced experiential learning, students often undergo an initial distinct disorienting dilemma as they transition into the role of a capstone student. As the capstone experience progresses, they engage in reflection and exploration of the role of occupational therapy in their setting, and this results in altered and expanded personal and professional world views. The research question guiding this study was: What personal and professional transformation, if any, do students identify over a 14-week doctoral capstone experience?

Methodology

Following approval from the Institutional Review Board, participants were purposively sampled from a cohort of nine OTD students during the first semester of their final year in the curriculum. Students were included in the study if they agreed to participate after being informed of their rights as research participants. Students were informed that participation in the study had no effect on the students' grade or standing in any course. Recruitment and enrollment were conducted without regard for race or ethnic background and the researchers maintained confidentiality of participant information and limited coercion. Participants in the study were assigned to both traditional occupational therapy practice settings and community-based settings that do not offer occupational therapy as part of their service repertoire for their capstone experiences. The traditional settings included, an inpatient rehabilitation hospital, a children's hospital, a pediatric institute for children with developmental disabilities and an orthotic/prosthetic clinic. Community-based settings or those without occupational therapy services included a center for individuals' experiencing homelessness, a university psychiatric clinic, an inclusive education program within higher education, and a day program for adults with intellectual and developmental disabilities.

The overall data collected consisted of pre- and post-close-ended interviews and journal reflections. The interview questions were aimed at understanding the participants' assumptions about their capstone site, intended population, their perceived level of preparation for the experience, and perception of their own level of confidence, creativity, and adaptability. The researchers completed 19 interviews, as one of the nine participants did not complete the post-interview. All interviews were audio recorded with permission from the participant and transcribed by an individual outside of the research team to de-identify the data. The audio transcriptions were stored in a password protected, secure designated research file on the academic institution's secure, password protected network. The researchers' audited each interview transcript for accuracy. All participants completed a total of four journal reflections over the duration of the 14-week experience, which was a course requirement for the doctoral capstone experience, resulting in a total of 40 journal reflections. The participants' confidentiality and anonymity were maintained through the data collection and analysis process. Participants' names were correlated to a number during the distribution of the close-ended interviews and journal reflections were assigned a pseudonym to ensure the names would not be releveled during the data analysis process. Each artifact provided the researchers with detailed information that assisted with further understanding of the research questions and overall student experience.

This study occurred between January and September of 2019 in multiple phases. An overview of the timeline of this study is represented in Figure 1.

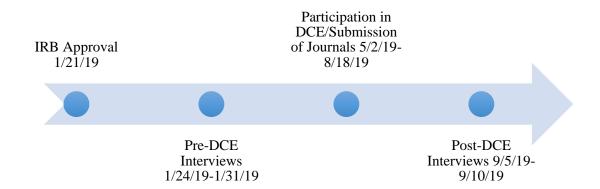


Figure 1. Timeline of Data Collection. Timeline of data collection events over the course of the doctoral year.

This study utilized a qualitative approach to understand the lived experience of the OTD student while completing a doctoral capstone experience, either in community-based practice or a traditional practice site. The researchers completed a qualitative analysis of pre- and post-DCE semi-structured interviews, as well as reflective journals. Following the process of thematic analysis (Braun & Clarke, 2006), the three researchers became immersed in the data by reading the reflections multiple times and member checking any content. From there, the codes and themes were developed a priori, drawn from the literature and underlying frameworks of transformative learning and "Doing-Being-Becoming" (Mezirow, 1997; Wilcock, 1998a). The researchers individually generated initial codes and themes, then came together to finalize the themes. Once the three researchers reached consensus, the themes were defined and supporting quotes were selected.

Rigor and trustworthiness in this research study were essential in determining the researchers' positions in acquiring the data and ensuring that each researcher's viewpoints were credible. According to Krefting (1991), researchers need alternative models to fit qualitative designs that ensure rigor without forfeiting the relevance of the qualitative research. While there are a variety of models that address trustworthiness and rigor, Guba's (1981) model was further explored, as it has been used particularly in the healthcare setting for many years. Guba's (1981) model is based on the identification of four aspects of trustworthiness that are relevant to this study: (a) truth value, (b) applicability, (c) consistency, and (d) neutrality. The researchers ensured truth value by designing the qualitative instruments grounded in the literature and ensuring that when the questions were asked, the participant responses were considered as accurate interpretations. The second piece in making certain truth value and credibility were achieved was through the process of member checking, to include peer review amongst researchers. To confirm applicability in the implementation, qualitative researchers need to assess the degree to which the findings can be practical to other contexts or with other groups. This allows for the ability to generalize the findings to larger populations (Sandelowski, 1986). In this study, the researchers have explained the demographics of the university and the description of the participants in the study. Thirdly, this study's consistency was achieved through the procedures taken by the researchers to replicate future studies. Finally, neutrality was addressed through minimizing bias of the researchers. Neutrality and reflexivity were ensured through the researchers' ongoing assessment of each individual's own background, perceptions, and interests during the study (Aamodt, 1982).

Results & Discussion

The results of the qualitative analysis of the OTD students' interviews and reflections were synthesized to address the research question that guided this study. As described above, deductive analysis of the research led to the themes as they align with the steps of the transformative learning model and a fundamental occupational framework of "Doing-Being-Becoming" (Mezirow, 1997; Wilcock, 1998a). The research question guiding this study was crafted to allow the researchers to determine if personal and professional transformation had occurred because of this capstone experience. To fully understand this process, Mezirow's (2000) stages of transformative learning were used to organize the analysis. Themes that emerged included an understanding of the unknown or unfamiliar, and facing those challenges. This was often the students' "disorienting dilemma" or "self-examination," which are phases one and two of the transformative learning theory (Mezirow, 2000). From there, students described the increased nature of flexibility and creativity, and a personal redefining of what success meant to the individual student, allowing them to explore and plan for this new role.

In addition to the framework of transformative learning, the researchers wanted to further understand the students' transformation in terms of an occupation-based model, Doing-Being-Becoming (Wilcock, 1998a). There are clear connections in these two frameworks. "Doing" refers to the occupational performance of an individual, which is essential for the individual to interact with others and develop one's own identity, and to create and shape the society (similar to stages 2-4 of Mezirow, 1997). "Being" refers to being true to self. This assumes that people are required to spend time thinking and reflecting, and that this reflection helps an individual to sustain their roles (self-reflection is critical in the transformative learning model and aligns with stages 5-7). "Becoming" means how people redefine their values and rethink their priorities to prepare transformation of their new roles (aligning with stages 8-10 of Mezirow, 1997). Similar to transformative learning, all aspects of this framework hold the potential for growth and self-actualization of the individual.

Results and discussion are aligned in this way to convey both transformation of the learners as well as the importance of student's identity as "occupational beings" (Wilcock, 1998a, p. 253).

Disorienting Dilemma

Santalucia and Johnson (2010) suggest that occupational therapy students begin experiential learning with a "disorienting dilemma," in which they have many assumptions, including those about "occupational therapy, patients and clients, groups of people, supervision, the environment, and themselves" (p. CE3). In the case of the DCE, this disorienting dilemma was present in each of the students. In one example, participant 1 stated, "I think just with my limited knowledge about how to implement a program, I know we've had the classes, but I think actually doing it, it's going to be a little bit more challenging than I'm anticipating." Another student, participant 7, stated:

[A]s we get more into the coursework this semester, it'll help me feel more prepared going in [to the DCE] ... We have, you know, basic ideas, but we all have ideas that aren't super expanded yet. So, it just kind of seems uncertain.

Often, the students were not only faced with their assumptions of practice, based on prior fieldwork experiences, but also an entirely new way of understanding experiential learning through a more self-directed path. In this study, a key finding related to personal transformation was the students' discussion of *apprehension*, *uncertainty*, *fear of failure*, and how they faced those challenges.

Self-Examination

As students reflected during the pre-interview process, they also shared aspects of self-examination. Students referenced their perceptions of preparedness, their supports, and of key importance, their assessment of their ability to be self-directed in their learning.

The shift from heavy group work in the pre-doctoral phase of the curriculum to self-directed, independent learning throughout the capstone was discussed as a potential challenge for some students. Participant 8 stated:

I think what I'm most worried about is really having to be in charge of it myself, making sure that I stay on track and like, there wouldn't be like one person making sure I meet my deadlines and goals. For the most part, it would have to be me to do that.

Another student (Participant 3) stated:

I'm a little bit nervous, just because it is so self-directed and figuring out exactly [what to do]. I'm kind of nervous that I'm going to make a wrong move and not know exactly what to do. But it is comforting to know that I have, like, my capstone team behind me...

In terms of positive perceptions of readiness, in many cases, the awareness of available supports from both the faculty and the site mentor made an impact. Participant 3 also stated, "It's very comforting to know that I have my capstone team behind me. I have [my advisor] and three other people that he suggested be on my team. So it's good to have a wide base of support." This self-examination is an essential aspect of the transformative learning process. Marsick and Mezirow (2002) concluded that critical reflection on the disorienting dilemma or problematic belief is a necessary step in the transformative learning process, to move toward exploration.

Exploring and Planning for a New Role

While students prepared for their capstone experience, they were required to consider what the DCE might entail in terms of site preparation, their role as an OTD student and subject matter expert, and how this experience would differ from past learning. For some students, who completed their DCE in a nontraditional setting and were required to create a new role for OT, they found themselves faltering in their confidence. Participant 2 stated:

The site that I am at is a physical therapy place and they don't have any OTs so I will definitely be the expert in my field ... I'm not sure of myself just because I am kind of at that entry level knowledge and skill set, but I have to represent a whole profession. And also just making sure that everything that I do is kind of occupation-based and stays true to the tenets of occupational therapy...

As a result of this exploration, the learners (students) often experience a paradigm shift and, as a result, they consider different options and plan a new course of action. Roberts (2006) found that those who experience a positive change in their understanding of a new role are stimulated to learn more. They see it as a challenge which increases their determination and their level of persistence, which was reflected by many of the students as they prepared and embarked on their DCE. In both the pre-interviews and journals, students reflected on their ability to be an initiator in this process, to plan for both the expected and unexpected, and to build connections based on prior experiences. For example, participant 4 shared in a journal during the experience:

When I came across something that I didn't quite understand or didn't feel comfortable carrying out independently, I reached out to the therapy staff on my unit (who have all been very willing to answer my questions). While this hasn't kept me from coming across situations where I don't quite know how to respond, it has allowed me to be more confident with not always knowing the answer and reaching out for help when I need it.

Similarly, participant 4 stated later in their post-interview:

I feel like this experience sort of forced me to be more self-directed ... when I was on fieldwork, while I learned a lot, I think I also had a habit of relying too much on my fieldwork educators. I would second guess myself, and I would want their validation, but with the mentoring for my DCE, I didn't get that all the time. I had to learn how to cope with that and be okay with that.

A key component of this experiential learning was the difference between supervision and mentoring at the doctoral level. The shift in this role allowed many of the students to fully engage in the final phase of transformative learning. Many students discussed that not having the same level of "supervision" allowed them to be more comfortable, to take risks or try new ideas, and to effectively advocate for themselves and/or the profession. Participant 1 stated:

She gave me a lot of independence to work with my program and do what I needed to do to make my program work. So, it was nice to have the independence compared to what I had during fieldwork, so I felt like that was a good transition to now being a new grad.

In addition to developing these professional skills, students spoke of their new ability to see the application of occupational therapy in all settings of practice, which is essential in a profession that is so diverse.

Acquisition of Knowledge: "Doing"

Wilcock (1998a) describes the concept of "doing" as the way people "spend their lives almost constantly engaged in purposeful 'doing' even when free of obligation or necessity ... it provides the mechanism for social interaction, and societal development and growth, forming the foundation stone of identity" (p. 22). In this instance, students used the occupation of doing to acquire their knowledge and move forward in their learning and ultimately, their new personal and professional identity. In this study, students described the ways in which they acquired knowledge through active learning, feedback, creativity, and problem solving. When discussing the particular skills learned, participant 3 shared:

I think the two biggest skills that I have developed through this process is flexibility and self-directedness. I think flexibility was one of my strengths going into this process. I would say that I have always been pretty good about taking what other people have to say into consideration. But, I have really learned to actively take feedback and use it to guide my future work. I understand that the feedback I have received is not to be taken personally and that it was all given as a way to provide the best program that I could. In the hustle and bustle of the outpatient setting, I learned very quickly how to do things on my own and how to find the people in the organization that I need to reach out to or meet with to get things done.

A change in how students define the skill of creativity was a common theme among many of the participants. For example, participant 9 shared:

I think my lens of "creativity" is broadening as well. People think of creative as coloring ... but being creative in a sense of figuring out if you're in a pinch or being creative with "I planned this entire intervention and it's not working." Sometimes you just have to let your clients use the supports that you give them, but in their own way.

In regard to problem solving, participant 4 shared, "I think the most valuable resource I gained in terms of that is just figuring out where I can look to and the resources I can reference to help me find the answers that I need."

Reflecting and Internalizing: "Being"

As the students progressed in the DCE, there was a clear sense of their ability to reflect and internalize what they were learning and how it had an impact. For example, participant 8 stated:

I now take more calculated risks. I look more at the evidence that's there. So, the risks I'm taking don't feel like wildness, they feel like more research risks, so I'm more confident in how the outcome might be and how a person might benefit.

This stage of transformative learning aligns well with the occupational concept of "being." Wilcock (1998b) described this as, "'being within self', whereby the doer experiences an enhanced sense of self manifested, perhaps, in a sense of inner peace or in self-discovery" (p. 249). In the provisional trying of new roles and building of competence and self-confidence, the students in this study had a new self-awareness of their skills. They each spoke of a clear professional growth, from start to finish of the DCE, which occurred as a result of this experience. In relationship to understanding their new roles, one student commented on the importance of education in the profession. Participant 3 stated, "I've gained a better appreciation for the role that OT has in teaching and educating their clients and the family members that they work with, because I think it often gets really overlooked." Students were able to manifest this new sense of self through seeking out opportunities, using education to enlighten others, utilizing evidence to support their learning, and ultimately, trusting the process.

Reintegration: "Becoming"

The final stage in the student's transformation was the reintegration into their role, or "becoming" an occupational therapy practitioner. Mezirow and colleagues (2000) described this stage as "reintegration into one's life on the basis of conditions dictated by one's new perspective" (p. 22). Wilcock (1998b) described the idea of "becoming" in the same light, as "the transformative element whereby the doer strives to develop, change, grow, and be better" (p. 253). In some capacity, all of the students described either their new perspective on the profession, the site's new perspective of OT, or both. For example, participant 1 stated:

I feel like this experience where I was more independent in my work, I felt like I could better grasp OT's role and what we do as an OT, and I felt way more confident in my abilities to administer interventions and work with clients one-on-one.

To move into this new role and identity, students described concepts such as confidence, independence, and intrinsic motivation. At the post-interview, participant 9 commented on their overall increase in confidence as a result of the DCE:

I have had a great experience and I've gotten some really great opportunities out of it. This time has let me grow and see my possibilities. Academically, I'm not a very confident person, so I think being on my own and planning things on our own has definitely given me more confidence.

Limitations and Future Directions of Research

This study provided results of the perspectives of a limited number of students from one university's entry-level OTD program, and therefore may not be generalizable to other programs. Variations in capstone focus and curriculum may further restrict the generalizability of this research to other entry-level OTD programs.

Additionally, students were prompted to reflect on their experience during the capstone both within the context of coursework and the semi-structured interviews. While it fell on the students to be able to critically reflect in these areas, they may have felt influenced in some way by the context of the prompts or the instructors who carried out the interviews. To counter this as much as possible, there were

no grades associated with these activities and students were reminded frequently that their participation had no bearing on their status in the program.

Future studies could also include a larger sample size from a variety of entry-level OTD programs across the country. It may also be interesting to complete a comparative study between students experience in traditional practice settings versus those in role-emerging or community-based practice sites.

Conclusion

According to Mezirow, transformative learning manifests when beliefs, values, and perspectives are changed, customarily from engaging in questioning and critical self-reflection on the experience. Wilcox (1998b) adds to this understanding by an occupation-based framework that pushes the practitioner towards self-actualization and growth. This study outlined findings of the personal and professional transformation that occurs for entry-level OTD students through the completion of the doctoral capstone experience, as aligned with these frameworks. The doctoral capstone not only brought value to the individual development of the doctoral students, but will enhance the profession as a whole. The educational research priorities of the occupational therapy profession include theory building and the identification of signature pedagogies (American Occupational Therapy Association, 2014). The results of this study provide information to drive curriculum planning in entry-level occupational therapy doctorate programs, provide resources for faculty who facilitate doctoral capstones, and align academic experience to current practice. The findings suggest that self-reflection prior to, during and at completion of the doctoral capstone experience can help the development of occupational therapy doctoral students. Findings have also added to the literature in the inherent benefits of critical reflection and transformative learning, particularly in fields that implement an experiential learning placement in a variety of settings. With a growing need for relevant, supportive capstone placements, models of personal and professional growth must be identified so that preceptors and educators can ensure a successful student learning experience.

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