Situated Learning and Interprofessional Education: An Educational Strategy Using an Apprenticeship Model to Develop Research Skills for Practice

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Abstract

Interprofessional education (IPE) offers an opportunity to train health professional students to develop research skills collaboratively, while working on authentic healthcare problems. The situated learning educational model offers a unique way of structuring IPE experiences to incorporate the healthcare context, Communities of Practice, and meaningful participation of all learners. This paper will discuss an educational strategy developed to support the role progression of interprofessional research students within a project that is embedded in an authentic healthcare problem that has implications for IPE program development. The authors present a visual model that supports understanding of the development of knowledge and skills of learners that has implications for IPE, educational training, and research practice.

Introduction

Academic health professional programs are becoming increasingly aware of the need to prepare professionals for working collaboratively in healthcare environments in order to enhance quality and cost-effective care (Institute of Medicine, 2003; Interprofessional Education Collaborative Expert Panel, 2011; Paul & Peterson, 2001; World Health Organization, 2010). With this recognized need in mind, professional programs within higher education institutions are developing curricula which provides students opportunities to learn with and from one another through an Interprofessional Education (IPE) approach. IPE is understood as a situation when two or more professions engage in a collaborative learning process with the aim of enhancing engagement and quality of care (Alinier, Harwood, Harwood, Montague, & Ruparelia, 2014; Center for the Advancement of Interprofessional Education, 2002). Furthermore, IPE reflects the highly collaborative health work environment in which many professionals practice.

Despite the recognition of need for IPE learning opportunities, a review of literature reveals that barriers to successfully implementing an IPE experience for students in health professional programs include coordinating schedules between students within programs, faculty buy-in to engage in and design the IPE experiences, limited resources for physical space, and faculty and student availability within professional programs, as well as a hesitancy, on the faculty's part, to become engaged in a new approach to educational practice (Alinier, et al., 2014; Cooper, Carlisle, Gibbs & Watkins, 2001; Pecukonis, Doyle, & Bliss, 2008; Reeves, Goldman, & Oandasan, 2007). Furthermore, in a study that examined students' perceptions of their engagement in IPE, Michalec, et al., (2017) and colleagues found that one significant barrier to IPE is students not having the chance to engage in an authentic health setting as part of the learning experience. "Simply put, having not had the opportunity to 'try on' or even see the roles of their own or other health professionals in actual health care settings, students had significant difficulty cultivating and adopting a professional identity, let alone embracing the tenets of interprofessionality or an interprofessional identity" (p.14). This study also noted the importance of faculty presence in modeling and providing feedback in impacting students' attitudes and willingness to engage

in IPE learning. Furthermore, faculty feedback based on evaluation has been shown to afford accountability, and to prevent student disengagement and apathetic attitudes towards IPE experiences (Michalec, et al., 2017).

Uniquely, the project described in this manuscript addresses many of the barriers noted above. By unfolding organically, one step flowing to the next, with a focus on innately interdisciplinary real-world issues, the project afforded an opportunity to educate students within an authentic context, intimately mentored by health care professional faculty. It is our contention that authentic problems within healthcare can drive the learning of interprofessional students. Collaborating on real-world issues as an interprofessional team fosters powerful opportunities to develop innovative and creative solutions that may not have been possible with a single disciplinary approach.

As interprofessional education and collaboration is a necessary ingredient to providing effective and efficient care in today's healthcare environment, so is evidence-based practice imperative to providing such care (Sackett, Rossenberg, Gray, Haynes, & Richardson, 1996). Therefore, it is critical that professional students develop research skills to understand and use evidence to inform practice (Javaherian & Scheerer, 2007; Kielhofner, 2006; Polit & Beck, 2017; Whittaker, 2012). Community-based, applied research, carried out by seasoned researchers, student researchers, and community partners, offers a vehicle to support student research skill development within real-world practice settings that has implications for enhancing practice (Javaherian & Sheerer, 2007; Paul & Peterson, 2001; Wilkins et al., 2001). By overlaying an IPE approach on applied research, students can see the value of collaborating with other professionals to better address practical research questions through systematic study of an issue (Ryan & Hassell, 2002). Interestingly, there is a dearth of literature describing interprofessional teams that are conducting research with the dual aim of generating new knowledge and educating students within an IPE approach (Wilkins et al., 2001).

Use of a Situated Learning Model to Support IPE Learning

We propose that a meaningful way to develop applied

research skills within an IPE experience is through a situated learning model (Lave & Wenger, 1991). Situated learning is an educational model in which knowledge is socially constructed within the interrelationship of learners, teachers, and the environment (Lave & Wenger, 1991; Merriam, Caffarella, & Baumgartner, 2007). These relationships are enriched through the participation of multiple disciplines in an IPE framework. Bringing together the goals of educating interprofessional students to develop research skills for practice within an authentic context, with the overall approach of situated learning, may offer insights to developing effective and meaningful IPE learning experiences for students and health professional faculty.

The educational approach of situated learning was initially put forth by educational scholars, Jean Lave and Etienne Wenger (1991) and draws from social learning theorists (Bandura, 1977; Schön, 1983; Vygotsky, 1987). Situated learning posits learning as a process of collaborative participation within context, instead of being situated solely in individual minds regardless of environmental influence. This approach takes into consideration three key elements in its application: context, Communities of Practice, and participation of learners (Lave & Wenger, 1991; Stein, 1998).

Within the situated learning model, learning cannot be separated from context, or the situation in which learning takes place (Merriam et al., 2007). While this idea is not one without debate (Anderson, Reder, & Simon, 1996), knowledge production does not occur in one context and transfer effectively to another. Instead, learning is most effective when real-world or authentic problems are untangled within the social and physical contexts wherein they occur; the context informs the problems and solutions, providing structure and meaning to learning (Brown, Collins, & Duguid, 1989). This finding is not unlike the recent research that explores the role of context in developing meaningful IPE projects (Michalec, et al., 2017). In the situated learning model, learning occurs by "doing," the engagement of learning in context. Furthermore, learning is not only situated in the context of practice, it is "an integral part of the generative social practice in the lived-in world" (Lave & Wenger, 1991, p. 35).

In grounding learning within context, learners inevitably engage with other learners in a Community of Practice, in which learning is pursued in joint activities, enabling shared knowledge. Communities of Practice include learner roles of varying experience, much like the roles of apprentices, young masters, and masters in craft apprenticeships (Brown, Collins, & Duguid, 1989; Lave & Wenger, 1991). Similarly to the physical skills developed within the craft apprenticeships, the cognitive apprenticeship method has been described to convey the teaching and development of complex cognitive skills (Collins, Brown, & Newman, 1986).

Building upon the concept of these craft apprenticeship roles, cognitive apprenticeships theory posits the enculturation of learners into practices through participation in social discourse and activities in situations where learning takes place in order to support meaning (Belcher, 1993; Brown et al., 1989; Lave & Wenger, 1991). This application of the cognitive apprenticeship within a social context encourages, "a deeper understanding of the concepts and a rich web of memorable associations between of important concepts and problem solving contexts" (Collins, Brown, & Newman, 1986, p. 4). Within Communities of Practice, learners co-construct knowledge with masters, or teachers. Here, teachers have the onus to create spaces where learners can explore and take risks in supportive, yet challenging, contexts in order to construct knowledge (Merriam, et al., 2007). In addition, teachers using a cognitive apprenticeship model will aim to make implicit process explicit through observation, role modeling, and practice (Brown, Collins, & Duguid, 1989). The teacher takes on roles of coach and model while the student learners engage in real-world problems and issues (Hammel, Finlayson, Kielhofner, Helfrich, & Peterson, 2002). These teacher roles could be seen as a process continuum of *modeling* knowledge and skills, *coaching* student to perform tasks, and *fading* support as students perform project activities independently (Collins, et al. 1986). Moreover, it is not only the teacher from whom the learner learns but also from peers, professionals, and other community members (Lave & Wenger, 1991). Indeed, Belcher (1993) suggests that learning that is grounded in emerging membership of a community is as important or more important to the overall learning process.

When learners co-participate in learning communities, knowledge generation is understood as a process of social participation, not merely the acquisition

of knowledge by individuals. This participation in learning recognizes that learners hold unique positions within the Community of Practice. Lave and Wenger (1991) introduce the concept of legitimate peripheral participation as part of situated learning. Participation in the periphery is understood as empowering, as novice members join communities and begin learning on the periphery. As their knowledge and skills advance and they become more competent, they experience a development of a progression of roles, much like craft apprentices: Novices to Apprentices to Emerging Masters. Within this process of role development, learners move towards "full participation" in the Community of Practice and begin enculturating new members into the practice of interest. "In this sense, peripherality, when it is enabled, suggests an opening, a way of gaining access to sources of understanding through growing involvement" (Lave & Wenger, 1991, p. 37).

Application of Interprofessional Education, Applied Research & Situated Learning

Project Background

In 2010, two university researchers with a background in gerontology, social work (SW) and occupational therapy (OT) (the authors) and two nursing administrators in a local healthcare system (one of whom was a former student of one of the university researchers) partnered to form a Community of Practice with a focused interest in exploring transitions of older adults from hospital to home in order to improve care. Health care setting transitions, such as moving from an acute stay in the hospital to home, represent a critical moment in older adults' continuum of care when communication breakdown, lack of planning and follow-up, and major life adjustments without necessary supports can pose a threat to health and participation for this population (Coleman, 2003; Dedhia et al., 2009; Grahm, Ivey, & Neuhauser, 2009).

In tackling this authentic problem of older adult care transitions, our Community of Practice members designed an applied qualitative research project that would intentionally involve graduate research students from different professional programs (i.e. social work, occupational therapy) in a mentored research experience while addressing real-world

problems in the aging field. We designed the project by using the situating learning model (Brown, Collins, & Duguid, 1989; Lave & Wenger, 1991; Merriam, et al., 2007). In applying a situated learning model to the interprofessional student learning experience we intentionally strove to: (1) educate students to understand and value interprofessional collaboration in solving problems in practice; (2) invite students to join a Community of Practice with researchers and community members as a way of meaningfully connecting research with practice; and (3) provide an opportunity for students to participate in a process in which they move from the periphery to ownership of an applied research project. In this project, students were apprentice learners, engaging in research within a real-world situation with the ultimate goal of connecting research to interprofessional practice to solve an authentic challenge. The remainder of this paper will discuss our use of situational learning concepts in developing an interprofessional education (IPE) learning experience for students to develop knowledge and skills for research and practice.

Developing and Implementing an IPE Research Project Using an Apprenticeship Model

Through the course of seven years, twelve professional graduate students (nine OT and three SW) participated in the applied research project with the authors (OT, SW, gerontology) and community partners (nurses) addressing a real-world issue in healthcare (care transitions of older adults). The students completed a research methods course within their own professional program prior to participating in the project. Students selected to engage in this project expressed an interest in working with older adults in their future careers.

The twelve students were not all involved in the project at the same time. Instead, 3-4 students (typically 1 SW student and the remainder being OT students) worked collaboratively during each phase of the project that spanned seven years, with some students overlapping. This approach of overlapping student participation on the project allowed for the students to draw upon previous students' work on the project. Furthermore, this overlapping strategy reflects the model of a Community of Practice, where each new group of students benefits from the prior engagement of the preceding group of student researchers. At the Novice

stage, where students first joined the project, they engaged on the periphery, absorbing the knowledge generated within the practice community. As the students moved towards the center of the Community of Practice they prepared to share with the new group of students their skills and knowledge including the products they developed during their time with the project such as written documents, stories of their work, and formal presentations.

The Nautilus Seashell Learning Process

The situated learning literature refers to the concept of scaffolding of the apprenticeship experience (Belcher, 1993) which is defined as an incremental mastery of skill development guided by the teacher using instructional strategies to support students to progressively move toward greater understanding or skill development (Bruner, 1977). As the IPE research learning opportunity developed, it became clear we, the authors, were using a scaffolding model whereby apprentice learners were collectively building upon experiences and learning to increase understanding performance, in a vertical sense. Moreover, students were building on skills, knowledge, and experiences to take the lead in project activities, reflecting Lave and Wenger's (1991) model of legitimate peripheral participation. This also reflects the ideas presented in the cognitive apprenticeship approach, where learners move from Novice to Apprentice. To us, in these observations, a picture of a nautilus seashell came to mind as a way of describing the learning process. Like the outer edges of the shell and spiraling inward, as the research experience deepened and intensified, students developed skills, knowledge, experiences, leadership in the project, spiraling inward. In addition, the wide spectrum of colors that are typical of seashells reflect the variety and nuanced learning experiences we observed in students engaged in this apprenticed project. In keeping with the nautilus seashell image, the figure below provides a visual image of the three phases of the educational strategy we used in this IPE learning experience. While we identify three distinct phases in this manuscript, it is important to note that the process was actually fluid, where learning experiences flowed seamlessly from one phase to the next, much like seashell spiral, where the spiral is continuous (see Figure 1).
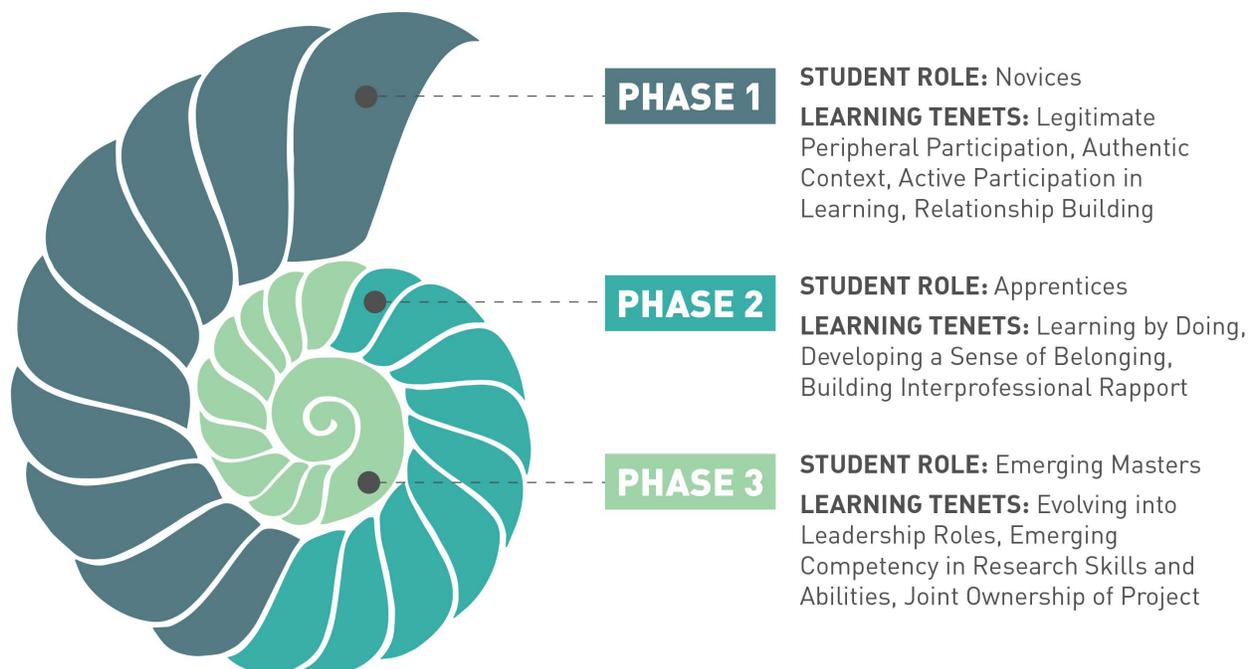
Phase One: First Turn of the Seashell

In joining the Community of Practice, students were situated on the periphery of an interprofessional research project grounded in a real-world situation. In this educational approach, the real-world situation grew out of a collaboration among individuals representing multiple professions (i.e. nursing, social work, occupational therapy) who had identified a problem occurring in a local health system of lack of understanding of the experience of older adults transitioning from hospital to home from the older adults' and their caregivers' perspectives. Positioning learning within an authentic context reflects a main tenet of situated learning (Bloomer, 1995; Brown, Collins, & Duguid, 1989; Merriam et al, 2007) and has been shown as an effective way of delivering an IPE learning experience (Michalec, et al., 2017).

This first phase offered an empowering learning opportunity for students joining the research team, as legitimate peripheral participants in the project, appreciating that learners can immediately begin meaningful participation even as Novices (Lave & Wenger, 1991). In an effort to prepare students to engage in the project and as a way of fostering legitimate peripheral participation, Novices immediately began learning activities intentionally designed by the teachers, such as studying research methods to be used in the project, reviewing background literature on the focus of the project (care transitions of older adults), and engaging in human ethics training. Novices met with the project investigators, the authors, on a weekly basis. Initially, in these meetings, teachers took a lead role in facilitating discussions. However, as time went on, Novices led the meeting discussions, sharing personal experiences with informal and formal caregiving experiences with older adults, raising ideas from the literature they uncovered, and discussing nuances during data collection. As students became more skillful and experienced, they provided feedback about the direction of project activities. As an example, when students identified a particular area of interest that related to the main topic of the project, they were encouraged to conduct a literature review to build knowledge around this interest and to support the future direction of the project.

Figure 1.

NAUTILUS SEASHELL LEARNING PROCESS

PHASE 1

STUDENT ROLE: Novices

LEARNING TENETS: Legitimate Peripheral Participation, Authentic Context, Active Participation in Learning, Relationship Building

PHASE 2

STUDENT ROLE: Apprentices

LEARNING TENETS: Learning by Doing, Developing a Sense of Belonging, Building Interprofessional Rapport

PHASE 3

STUDENT ROLE: Emerging Masters

LEARNING TENETS: Evolving into Leadership Roles, Emerging Competency in Research Skills and Abilities, Joint Ownership of Project

Another important aspect of this initial phase of the project was shared governance between Novices and teachers. One way this was accomplished was through jointly determining project expectations and responsibilities of both the Novice students and the investigator teachers. Some examples of these guidelines are: co-learning will occur between students and teachers; openness; creation of useful and meaningful outcomes for community partners; exhibiting self-initiative and self-motivation; and teachers creating an environment that builds trust and respect, and listening actively to support communication throughout the process.

Shared governance also involved students taking responsibility for setting their own individual learning goals for their time involved in the project. For example, one group of interprofessional students identified a need to better understand care transitions of older adults from the caregiver's perspective. To address this learning need, students conducted a literature review and jointly wrote up their findings, presenting to the community of practice. This shared governance served to promote active participation in learning.

In Phase One, Novices also learned about the culture of the Community of Practice, which entailed building relationships with teachers, with community partners, and with one another. The process of developing relationships, or building rapport, involved students bringing to awareness their professional perspectives of the project as well as life experiences that impacted this professional view. Then, the students shared their perspective with the perspectives of other professionals on the team, building a mutual appreciation of one another's knowledge and perspective to demonstrate harmonious communication and interactions. The appreciation that developed of one another's profession is a cornerstone of interprofessional education and collaboration (Center for the Advancement of Interprofessional Education, 2002; Interprofessional Education Collaborative Expert Panel, 2011). Project teachers facilitated the discussions of their own professions and modeled appreciation of other professionals by asking questions of one another and sharing stories of their practice and research experience when collaborating with others from various professions. Interestingly, students achieved a deeper bond of trust and rapport among themselves, as an interprofessional team, as they began to meet

independently from the instructors. Therefore, in order to facilitate rapport among Emerging Masters at this stage of apprentice development, it is important to encourage activities that do not involve teacher oversight.

Phase Two: Spiraling Inward

With the nautilus seashell image in mind, students demonstrated a spiral inward as they progressed in the research project in Phase Two. As they immersed themselves in the project, working as a united interprofessional team, they slowly, yet deliberately, moved from the periphery towards becoming more active members in the Community of Practice. The authors observed an intensifying of the students' level of involvement as they evolved into the role of Apprentice, as described by Lave and Wenger (1991). Recognizing that the project Community of Practice consisted of Apprentices, teachers and community partners, the teachers intentionally developed opportunities for all members of the learning community as a way of grounding learning within the real-world context of the project. Additionally, the teachers were afforded learning experiences in which students actively developed research skills within the physical and social context of the project as an interprofessional team (Brown, Collins, & Duguid, 1989). In many ways, this concept is reflective of Belcher's (1993) depiction of a mother bird pushing the baby bird out of the nest as the first step towards the mastery of flight.

One way Apprentices progressed toward mastery within the project was by actively engaging in the building of research skills. This was accomplished by students first observing teachers leading project activities and then the teachers progressively nudging students to immerse in the *doing* of project activities. For example, to support the development of interview skills, teachers began by leading mock data collection workshops—focus group, mock interview guide, and modelling interview techniques. This allowed for Apprentices to observe body language, interpersonal skills, responsiveness, and the general ebb and flow of the interview process. Students were encouraged by the teachers to reflect upon these experiences and to bring awareness to the development of their own unique interviewing styles. The context for these mock interviews during Phase Two occurred within the classroom, where social interaction was between

Apprentices and teachers. Actual project data collection consisted of individual and group interviews with older adults, informal caregivers, and formal service providers. This data collection took place in various locations within social and physical contexts such as participant homes, service provider agencies, senior centers, and restaurants. Teachers initially facilitated interviews while students observed, much like the mock interviews. Then, gradually, students were supported to take the lead in parts of interviews and eventually lead interviews independently.

This progression—of Apprentice observing and reflecting upon modelling of mentors and eventually leading project activities—which occurred during project data analysis during Phase Two, is reflective of the cognitive apprenticeship approach (Hammel, Finlayson, Kielhofner, Helfrich, & Peterson, 2002). To facilitate data analysis skill development, teachers provided examples of their own data analysis from previous qualitative research projects—coded transcripts and thematic analysis. Next, teachers and students participated in analysis of project data side-by-side, with teachers modeling techniques and sharing thoughts that included a reflection upon their own professional perspective during the process. The social context during this process began between Apprentice and teachers. Then, as Apprentices progressed in their skills and built confidence, the context for learning primarily involved interaction between Apprentices, with minimal teacher involvement. As Apprentices took the lead in conducting analysis, they developed a sense of belonging in the Community of Practice and began to take ownership of the work. They also engaged in discussions amongst themselves about how qualitative analysis occurred across professional perspectives and was enriched by this comparative analysis. In Phase Two, the project investigators, or teachers, intentionally focused on research skill development, rather than discipline-specific skills. In doing so, the Apprentices and teachers from their professions organically demonstrated professional perspectives, in providing insights and critical feedback to one another. In a way, each member of the Community of Practice used her own professional lens to make sense of data collection and research findings. Exciting learning moments occurred when students shared their interpretations of the research from their professional perspectives, resulting in an expansion and deepening of communal understanding. Through this process, rapport was

enhanced as Apprentices developed a richer respect and appreciation of one another's personal and professional insights and experiences in informing the project, a key tenet of IPE.

In addition to the development of skills as project Apprentices, reflection upon performance, learning, and teachers' roles was critical in working towards mastery in Phase Two. Students were asked to individually evaluate themselves and teachers midway through the project in order to create an intentional reflection opportunity. This evaluation was based upon the jointly generated expectations, responsibilities, and individual learning goals developed during Phase One of the project. After self-reflection on progress on learning goals, each Apprentice met with teachers to discuss her self-assessment. These meetings were critical to teachers providing feedback and gaining an understanding of how best to support students in individual learning aims as the project unfolded. Furthermore, it afforded teachers the ability to provide individualized evaluation, promoting accountability (Michalec, et al., 2017). This process of intentional reflection by the students is reflective of the cognitive apprenticeship strategy of involving the externalization of a "producer-critic dialogue" that students eventually internalize, building self-monitoring and self-correction skills (Collins, Brown, and Newman, 1986, p.6).

Phase Three: Core of the Seashell

Much like the spiraling into the center of a nautilus shell, Apprentices moved from periphery to the core of the project. As Apprentices entered into this final phase of the situated learning experience, they evolved into the role of Emerging Masters, demonstrating a refinement of research skills, a growth in self-confidence as researchers, and a sense of ownership and belonging. For example, during this phase, students became primarily responsible for data analysis and began to assume a leadership role in project team discussions. It was common for the Emerging Masters to co-facilitate discussions on coding schemes of qualitative data, interpretation of findings, and implications in light of the literature and practice during research team meetings.

It is critical for mentors to develop a level of trust in students to foster risk taking (Belcher, 1993; Brown, et

al., 1989). Over the course of the project, the teachers intentionally created an environment where opinion and thoughts were given respect and consideration equally—in essence, a "safe space." Teachers demonstrated respectful dialog in modeling agreement and disagreement in developing research design strategies during team meetings, such as determining questions to include in interview guides, recruitment strategies, and ways to apply literature review in interpreting findings. Students were also invited to engage in these conversations as equals, where their perspectives were given careful consideration by the entire research team. By creating this environment of mutual trust and respect of one another's perspectives and professional viewpoints, students were able to demonstrate knowledge in a way that invited critique. It was through this critical discourse that students began to realize that they had achieved mastery of research skills, as evidenced in the confidence and knowledge that was conveyed as the students engaged in discussion.

In addition to building research skills and confidence in knowledge gained within the project Community of Practice, Emerging Masters developed a sense of ownership in opportunities to make meaningful contributions to a tradition of research and informing the direction of the project for the future (Hammel, Finlayson, Kielhofner, Helfrich, & Peterson, 2002). One way students took ownership of the project was in their dissemination efforts. Using the preliminary results, students developed a presentation to share their findings and facilitate a discussion around the utility of the results with project community partners and other stakeholders within the hospital system.

It is important to note that during this phase of the project, Emerging Masters demonstrated individual styles and professional perspectives. It was through this process of evolving from Novices to Emerging Masters that students were also able to affect their professional identity and perspective on the project while breaking away from professional silos. This resulted in a true appreciation and valuing of one another's perspectives and contributions to the enhancement of the project. As students engaged in project activities as Emerging Masters, it was not uncommon during group meetings for students to voice delight in new ways of understanding problems at hand from various professional perspectives. This inclusion of diverse perspective brought depth and breadth to analysis

and outcome development of the project, offering recommendations to stakeholders and community partners that were informed by individual professional perspectives and an interprofessional collaborative thinking based upon project findings grounded in a context.

In addition, at the core position of the project, Emerging Masters informed directions for the research, enhancing the project and benefiting mentors, and becoming mentors themselves (Hammel, Finlayson, Kielhofner, Helfrich, & Peterson, 2002). For example, one of the findings in the first portion of the overall care transitions project, jointly generated by the investigators and Emerging Masters, is the key role family caregivers play in care transitions of older adults from hospital to home (Zakrjasek, Schuster, Guenther, Lorenz, 2013). Using this finding along with a recognized need identified in the literature (Gitlin & Wolff, 2011), three new students (one social work student and two occupational therapy students) embarked on the next phase of the project to understand the experience of the family caregiver in order to support transitions (Scaffert, Keough, Zakrajsek, Schuster, & Dester, 2016). As emerging researchers graduated from their professional programs and joined the practice community, they disseminated the results of the study and recruited and helped to inform the next generation of Novices to join the project. It was with this cyclical, spiraling process, that new students joined the project at the periphery and used the knowledge from previous students' work and leadership to begin their own spiral courses into the Community of Practice.

Discussion

As researchers housed in an academic community with teaching responsibilities in multi-disciplinary health-related professional programs, one of our challenges is to make learning a dynamic and meaningful experience within the context of the real world, reflecting interprofessional practice and effective professional identity formation (Alinier, et al., 2014; Michalec, et al., 2017). The cognitive apprenticeship model was attractive to us (the authors), as it conveyed an intentional process of thoughtful integration and immersion into a Community of Practice. As an interprofessional team of researchers, we recognize the value of approaching problems (in this case, how to support older adults in their healthcare transitions) from diverse professional

perspectives. By developing this IPE learning experience based upon the tenets of situated learning (Brown, Collins, & Duguid, 1989; Lave & Wenger, 1991; Merriam, et al., 2007), we were able to offer a space and an opportunity for students from various professional backgrounds to organically learn from one another and their teachers. In this regard, the approach was not preconceived and imposed upon the students. Instead, the process naturally emerged through the efforts of the whole, encouraging a true collaboration and synthesis of ideas, regardless of professional boundaries. A result was the students' progressive ownership of aspects of the project and the generation of project products that were truly interprofessional.

An apprenticeship approach, with student roles involving Novice, Apprentice, and Emerging Master, appeared to reflect the enculturation into practice that we observed in our own professional lives and those around us. It seemed logical to us, and in line with our philosophical beliefs about adult learning, to utilize this approach in designing a learning experience for our students. Upon reflection on this apprentice approach, we have found that the nautilus seashell model was representative of the apprentices' learning and research experiences. The utility of the seashell model is evident in that it provides a structure that suggests milestones in student development as a legitimate member of a Community of Practice. These milestones may not only provide the opportunity to measure apprentice developmental progress but also the collective success of the Community of Practice in addressing real-world problems.

In bringing together the goals of educating interprofessional students to develop research skills for practice within an authentic context with the overall approach of situated learning, we feel the process we have outlined in this paper may offer direction to professional educators who are searching for an innovative and effective method that responds to the complexities inherent in the teacher-learner relationship, especially within community based research endeavors. More specifically, our observations depicted by the nautilus seashell model offer a way of supporting interprofessional students' seemless evolution from Novices to Emerging Masters. Through incorporating legitimate peripheral participation and situated learning (Lave & Wenger, 1991) and moving beyond scaffolding to spiraling inward as a way of

fostering Communities of Practice. The model's ability to capture both the simplicity and the complexities, the depth and the breadth of the interprofessional research student's experience, provides needed structure to a process that is often vague and not clearly defined to the detriment of both student and educator.

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