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## Creating an Interprofessional Collaborative Research Opportunity for Physical and Occupational Therapy Students

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Physical therapy (PT) and occupational therapy (OT) professional associations assert the importance that entry-level therapists learn and apply the knowledge and skills necessary for interprofessional collaborative practice; however, the majority of PT and OT programs do not have the other discipline at their university. A challenge exists for the creation of a transparent active learning opportunity promoting interprofessional student engagement when the two professions do not reside in the same university. This case study provides a model for how to feasibly create an interprofessional experience for students in universities that do not include a complementary or collaborative allied health professional program, using various technologies. While creating this collaborative project, we provided opportunities to meet the Interprofessional Education Collaborative's (IPEC) competencies: a) value/ethics for interprofessional practice, b) roles and responsibilities, c) interprofessional communication, and d) teams and teamwork through participation in a breast cancer survivorship research study. Within this demonstration project, the faculty were able to make "micro level" changes to foster interprofessional collaboration among universities with other allied health profession programs, which may lead to improved health outcomes for our clients. *J Allied Health* 2019; 48(4):e117-e122.

**REGULATORY REQUIREMENTS**, changing reimbursement structures, and the need to improve rehabilitation outcomes compete for rehabilitation professionals' time and energy. A critical component for ensuring positive outcomes is person-centered care provided among health professionals.<sup>(1)</sup> Interprofessional person-

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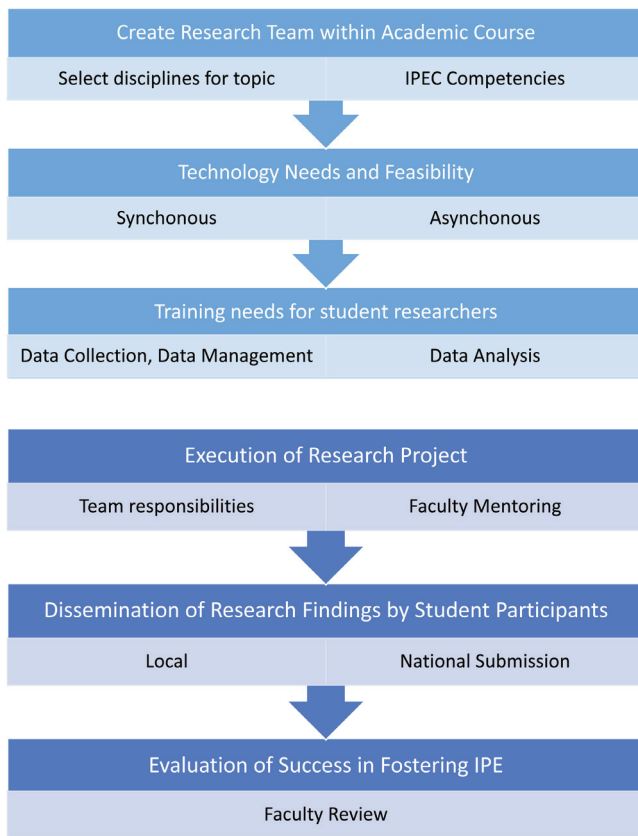
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centered care, however, does not just happen, but rather is fostered through professional education. From this recognition, six national health professional education associations came together in 2009 to create the Interprofessional Education Collaborative (IPEC),<sup>(2)</sup> whose mission is to ". . . promote, encourage and support efforts to prepare future health professionals so that they enter the workforce ready for interprofessional collaborative practice that helps to ensure the health of individuals and populations."<sup>(2,para2)</sup> IPEC identifies 4 core interprofessional competencies as key to collaborative practice: a) value/ethics for interprofessional practice, b) roles and responsibilities, c) interprofessional communication, and d) teams and teamwork.<sup>(3)</sup>

The call for interprofessional education (IPE) is endorsed by multiple health professions. The accrediting bodies within physical and occupational therapy mandate IPE curricula. The Accreditation Council for Occupational Therapy Education (ACOTE) standards state that occupational therapy (OT) students must be prepared to effectively communicate and work interprofessionally with those who provide care for individuals and/or populations to clarify each healthcare provider's responsibility in executing components of an intervention plan.<sup>(4)</sup> Likewise, the Commission on Accreditation of Physical Therapy Education (CAPTE) requires that physical therapy (PT) curriculum include learning activities directed toward the development of interprofessional competencies including, but not limited to, values/ethics, communication, professional roles and responsibilities, and teamwork.<sup>(5,6)</sup>

IPE can take different forms. One way is through a student and faculty teaching and training clinic. Within this environment, students gain awareness of professions' roles and responsibilities and "new knowledge of their professional practice."<sup>(3,p23)</sup> While clinics easily foster collaborative IPE, academic programs that exist in institutions without interprofessional clinics face challenges not only to meet accreditation criteria, but to create authentic interprofessional learning experiences to advance healthcare delivery. Often, academic programs may be the single health profession in the institution, presenting additional challenges for creating IPE opportunities for students.



**FIGURE 1.** Creation and execution of a collaborative inter-professional research project.

To address the need for IPE opportunities that are authentic, a collaborative research project between two universities was designed. The researchers sought to determine if this research project would serve as a feasible method to facilitate development of interprofessional core competencies within two health professions.

## Methods

Prior to initiating this project, the primary investigators received Institutional Review Board (IRB) approval from the universities (Univ. of Dayton #IRB00004455 and Eastern Kentucky Univ. #IRB00002836).

This interprofessional student demonstration project examined the process of creating a distance learning experience using a collaborative research study to foster the development of IPEC competencies in two rehabilitation professional programs. The collaborative research experience encompasses structural and procedural steps for a successful faculty-developed, shared research agenda and partnerships, within an academic curriculum (Figure 1).

### Interprofessional Education Project Development

The two primary investigators sought to find a collaborative relationship with the other discipline to con-

duct interdisciplinary breast cancer survivorship research. The OT professor's mentor introduced her to the PT professor, who taught at a different academic institution, based on their mutual research interests. The two professors regularly met via telephone to share clinical and research ideas, which resulted in the creation of a practical collaborative breast cancer survivorship research project. A secondary focus of the breast cancer research project was to provide an inter-professional learning experience to socialize PT and OT students in the research process by incorporating the professions' accreditation standards and IPEC competencies.

### Breast Cancer Survivorship Research Project

The second-year master's of occupational therapy students' research team and the first-year doctor of physical therapy students' research team jointly implemented the study *Describing the Impact of Stress on Self-Perception of Upper Extremity Function among Women Treated for Breast Cancer* under the guidance of their professors. The OT research team—eight OT students—were enrolled in a course which requires a “research experience,” meaning that students be involved in various aspects of a research project. In contrast, the PT research team—four PT students—were enrolled in a series of research courses that required the students to be involved in a research project over several semesters.

The Interprofessional Breast Cancer Survivor Research Study, which brought the two academic institutions' students together, investigated the relationship among self-reported upper extremity function and multiple variables such as perceived stress level, fear of physical activity, and measures of upper extremity function. The breast cancer survivor research participants came to the PT department, signed the informed consent, then moved through three different “stations”: a) self-administered patient reported outcome questionnaires supervised by PT student, b) objective physical measurements taken by PT students, and c) the Canadian Occupational Performance Measure (COPM) administered by OT student via videoconferencing.<sup>(7,8)</sup>

### Data Collection and Analysis

The primary investigators administered an anonymous online survey to each of the students after the project ended. Descriptive data from the survey was delineated by profession to compare perceived learning experiences. Course outlines, research protocols, research documents, written comments within course evaluations, research related emails, student research meeting content, interactions with student researchers, reviews of research data and the primary investigators' weekly meeting content were reviewed as other data sources. This information was then organized

**TABLE 1.** Examples of Educational Experiences to Promote Select IPEC Numbered Subcompetencies within the Core Competencies<sup>1</sup>

| Value/Ethics (VE)  | Roles and Responsibilities (RR)  | Interprofessional Communication (CC)  | Teams and Teamwork (TT)  |
|--|--|---|--|
| Value: Considered the availability of the other students prior to scheduling a research participant (VE6)  | Conducted evidence-based literature reviews on PT and OT role in rehabilitating breast cancer survivors (RR1, RR2) | Applied technologies to communicate with the students from the other discipline (CC1, CC2, CC6) | Coordinated data collection (TT3, TT5, TT11)                             |
| Research ethics: Deidentified participant information (VE2)  | Reflected on participants' reactions (physical and emotional) during data collection (RR5)                         | Conducted weekly meetings by telephone (CC3, CC4)   | Solved technical problems (TT3, TT9)                                     |
| Research ethics: Identified participants who did not meet the research criteria (VE8, VE9)                 | Articulated their professional responsibility to collaborate and communicate with other health professionals (RR6) |   | Entered data (TT3, TT5, TT11)  |
| Research ethics: Identified and reported data errors (VE8, VE9)  |  |   | Analyzed data (TT3, TT5, TT11)   |
| Research ethics: Maintained confidentiality by not discussing participants outside the research team (VE2) |  |   | Organized results for professional presentation organization (TT5, TT11) |

within the categories described below, and analyzed by how the project may have promoted the IPEC core competencies.<sup>(9)</sup> Table 1 shows a list of educational experiences used to promote these competencies and select subcompetencies.

**Create a collaborative research team between two rehabilitation professional academic programs.** Students resided on campuses 160 miles apart, and therefore, various forms of technology were used to communicate: text messaging, email, telephone, videoconferencing, and wikis. These technologies were used to: a) manage the project; b) schedule participants; c) coordinate collecting, entering, and storing data; and d) provide OT students access to evaluate the participants from a distance. Along with these technologies, a hard copy of the COPM Likert scales was available onsite. Breast cancer survivor participants were able to easily rate their perceived satisfaction and performance of their occupational performance problems when the OT students administered the COPM via videoconferencing.

**Determine the feasibility of using technology.** The COPM is an interview assessment used to gather data for this project. Videoconferencing is an appropriate mode to administer this assessment with breast cancer survivors<sup>(10)</sup>; consequently it was used. Within this project, the OT students were able to complete 100% of the COPM assessments, which illustrated the feasibility of administering the COPM via videoconferencing.

**Teach students to collaboratively collect and enter data.** Using the technologies described earlier, PT and OT students delegated tasks among each other, which were assigned to them by their discipline's professor.

Using a wiki, PT and OT students created a calendar for scheduling the participants. Students provided their availability to evaluate participants within the calendar, which allowed the PT students to schedule the participants. When the participants arrived at the PT department, PT students obtained informed consent, administered the surveys, and completed the physical assessment—strength, range of motion, muscular endurance, height and weight. An OT student then administered the COPM using videoconferencing in a private room. Each student entered the data collected within a protected spreadsheet hosted on a communal cloud server with limited access. Only deidentified data were recorded in the spreadsheet.

**Teach students to analyze data.** The PT and OT students were divided into four teams comprised of two OT students and one PT student per team. Students sought to answer structured research questions provided to each team as a basis for learning data analysis skills: a) What is the relationship among perceived stress, perceived arm function, objective arm function, and quality of life?; b) What is the relationship between perceived stress and perceived important performance problems?; c) What is the association among perceived stress perceived arm function, objective arm function and quality of life?; and d) What is the association between perceived stress and perceived important performance problems?

**Disseminate scientific findings.** PT and OT students presented separately. OT students presented the data from this study at their department's formal Research Day. The PT students presented to both PT faculty and local clinicians prior to their graduation.

## Results

### Value/Ethics for Interprofessional Practice

IPEC core competency 1 reads, “*Work with individuals of other professions to maintain a climate of mutual respect and shared values.*”<sup>(10,p10)</sup> The students exhibited this competency in a variety of ways. Respect for each profession was demonstrated when scheduling participants. PT students considered not only their availability but each of the OT students’ availability prior to scheduling the participant. Research ethics were demonstrated by a) deidentifying information of the participants within the research data spreadsheets, b) identifying participants who did not meet inclusion criteria or had exclusion criteria, c) identifying and reporting errors when auditing the data, and d) maintaining confidentiality by not discussing participants with noninvolved students and faculty. Lastly, interprofessional behavior was valued by informing each other when problems arose and collaboratively seeking solutions in a timely manner.

### Roles and Responsibilities

IPEC core competency 2 states, “*Use the knowledge of one’s own role and those of other professions to appropriately assess and address the health care needs of patients and to promote and advance the health of populations.*”<sup>(9,p10)</sup> PT and OT students conducted breast cancer survivorship literature reviews prior to participating in data collection so each would understand the survivors’ commonly reported impairments and rehabilitation needs. Using discussion boards and classroom conversations, students reviewed these findings and related them to the research project. During the data collection phase, each class session began with a discussion regarding the participants, such as their responses, emotions, etc. Lastly, PT and OT students collectively indicated at the end of the project that it is the responsibility of each professional to collaborate and communicate to “better serve the client;” and clients will receive “the best possible care” if provided the skills within each profession’s practice area.

### Interprofessional Communication

IPEC competency 3 reads, “*Communicate with patients, families, communities and professionals in health and other fields in a responsive and responsible manner that supports a team approach to the promotion and maintenance of health and the prevention and treatment of disease.*”<sup>(9,p10)</sup> Each student used a prepared script developed by the primary investigators to consistently communicate her role within the project and research-specific instructions to the participants. Consistent and regular communication occurred among students, through texting, GroupMe®, and/or email to schedule participants and resolve issues that arose when gathering and analyzing

data. Additionally, weekly telephone communication occurred between the primary investigators to ensure students were provided with instructional information and assist with solving day-to-day issues that arose.

### Teams and Teamwork

Competency 4 reads, “*Apply relationship-building values and the principles of team dynamics to perform effectively in different team roles to plan, deliver, and evaluate patient/population-centered care and population health programs and policies that are safe, timely, efficient, effective, and equitable.*”<sup>(9,p10)</sup> This demonstration project reflected this competency by coordinating research visits, entering data and completing data analyses collaboratively. Students also learned how to problem solve when a) technical issues arose, b) participants came late, and/or c) participants did not respond as they expected. For instance, they determined that texting was a better method than emailing to communicate when there were technical problems. Similarly, students concluded that using technologies such as GroupMe® was the most effective method to communicate when a participant was late or canceled. Impromptu problem solving occurred with participants who “did not respond” as expected to verbal directions. For instance, students indicated that they gave verbal examples or provided visual cues, thus illustrating their ability to modify their interactions with clients.

Additionally, abstracts of the research were submitted by the primary investigators, and were accepted and presented at scientific interprofessional conferences.<sup>(11,12)</sup>

## Discussion

Beyond the need for meeting education accreditation standards, the 2010 World Health Organization report described the connection between interprofessional healthcare teams and the provision of better healthcare services that could eventually lead to improved health outcomes.<sup>(13)</sup> This connection has led to an increased interest in integrating interprofessional clinical care into the “redesign” of healthcare. Among those who are interested are the American Occupational Therapy Association, the American Physical Therapy Association, and their respective professions’ educational accrediting bodies.

Among academics, there may be an interest in “redesigning” healthcare to include collaboration; however, therapy graduates continue to be faced with a “siloe” healthcare environment that does not foster interprofessional collaboration. Additionally, academic professional programs, where therapy students are trained, do not consistently provide interprofessional collaborative experiences. To address this need, Farnsworth et al.<sup>(14)</sup> analyzed academic institutions’ structure and current delivery of IPE to students

through the lens of Bolman and Deal's four frames of leadership and organizational process<sup>(15)</sup>: structural, human resource (HR), political, and symbolic. In brief, structural dimensions encourage "managers to create rules, policies/procedures, and other systems and structures to coordinate diverse activities into a unified effort."<sup>(14,p153)</sup> Human resource dimensions view that the "organizations exist to serve human needs rather than the converse."<sup>(15,p122)</sup> Political dimensions see "organizations as arenas, contests, or jungles where individuals or groups compete to achieve their interests in a world of conflicting opinions, scarce resources and struggles for power."<sup>(14,p153)</sup> Symbolic dimensions define "elements of organizational culture and conveys its highly influential role in shaping organizational performance."<sup>(14,p153)</sup> Within an institutional awareness of how universities either support or discourage IPE, deans and faculty could create an IPE plan. The plan could target one or more of the leadership frames and organizational processes noted in Bolman and Deal.<sup>(9)</sup> Thus, supports could be enhanced and barriers reduced for the integration of IPE within professional academic programs.

Within this interprofessional student research demonstration project, the primary investigators sought to make "micro level"<sup>(16)</sup> changes by adjusting the PT and OT students' research experience by including another rehabilitation professional. By making this small change, the primary investigators were able to self-reflect on their personal and academic departments' readiness to integrate IPE within their respective academic programs by evaluating the feasibility of the research project and the ability for the students to meet their student learning objectives for the corresponding courses.<sup>(14,17)</sup> Both were met through this demonstration project indicating a level of "readiness."

Reflecting on this IPE demonstration project, the primary investigators discovered that they applied a HR dimension of structure and organizational change within the research courses. They considered the students strengths and limitations and provided an environment where students could apply familiar technological tools to support communication and learning needs. The primary investigators built in the students' "human need" for autonomy and created a safe environment to practice collaboration skills with another discipline. At the same time, the primary investigators were able to teach research skills and competencies, thereby meeting the courses' student learning objectives, as well as professional accrediting organization standards for IPE.<sup>(14)</sup>

### Future Collaboration

Analysis of this interprofessional student research demonstration project revealed that future collaboration should provide additional interprofessional competencies in the following areas: a) roles and responsi-

bilities, b) interprofessional communication, and c) teams and teamwork. This became apparent when the primary investigators assigned discipline specific roles and responsibilities, based upon project and course needs. Faculty set the initial interprofessional communication schedule and assignment of the research questions by team. The primary investigators recognized that these students were about to begin their clinicals and needed the experience of negotiating roles and responsibility with progressively less supports.

To develop a deeper understanding of each profession's roles and responsibilities, future plans included constructing specific breast cancer survivorship educational activities which will highlight how each discipline's intervention addresses unique components of survivorship and function. Next, interprofessional communication will be enhanced through regular team meetings to discuss the research project progress and encourage informal conversations among the students using videoconferencing. Lastly, teamwork among the students will be enhanced by creating additional opportunities for the disciplines to work together to solve problems and jointly present research findings within a professional venue. Furthermore, using a tool such as the IPEC Competency Survey Instrument<sup>(18)</sup> to measure IPEC competencies before and after the learning experiences, will be employed to assess learning and areas for growth.

Beyond improving the interprofessional competencies as defined by the IPEC, projects structured with attention to interprofessional collaboration will provide the students with an opportunity to reflect on how their interprofessional skills have grown during the project. By giving them an opportunity to discuss this more broadly, we will learn if their perceived growth is congruent with the competencies and/or if they have grown in other areas. These students' insight will inform small changes in pedagogical approaches and foster meaningful IPE.<sup>(17)</sup>

### Conclusion

The overarching goal of this interprofessional demonstration project was to create an interprofessional collaborative research learning experience with a rehabilitation team member that was not present at the primary investigators' academic institution and is critical to provide best practice for breast cancer survivors. This goal was met. Our results confirm that interprofessional student research collaboration is possible due to the availability of various technologies, even when academic institutions are hours apart. Furthermore, this demonstration project supports the feasibility of making "micro level" changes to improve interprofessional collaboration, which may lead to improved health outcomes for our clients.

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