

A Model for Integrating Interpersonal Education in Higher Education

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Interprofessional Education (IPE) is a critical component of healthcare education and a requirement of many accrediting bodies. Approaching IPE from a holistic, comprehensive lens allows academic institutions to overcome challenges related to operating within program- and discipline-specific silos. Bringing students together to learn with, from, and about one another's professions empowers them to improve their teamwork and communication skills while broadening their understanding of various roles and responsibilities. Clarkson College developed a compulsory IPE course that is documented on students' transcripts. This online IPE 301 course was designed to provide students with educational materials to enhance their collaborative skills for better care outcomes. The Clarkson College framework was derived from best practices across the IPE landscape, including the IPEC competencies, the Quadruple Aim, and NCICLE, a thorough review of literature, and input from other institutions. To extend the reach of IPE beyond the clinical healthcare setting, Clarkson College expanded the curriculum to include community involvement and service. This course involves both synchronous and asynchronous learning opportunities for undergraduate and graduate, as well as on-campus and distance students. It is comprised of five online modules that include four sets of didactic lectures, videos, and quizzes, followed by three IPE experiences with reflections. Quantitative data points include the use of the ICCAS survey as pre-, mid-, and post-tests. Qualitative themes were pulled from student reflection submissions. Three years of cumulative data indicate that Clarkson College's IPE 301 course has resulted in students' improved ability to collaborate interprofessionally, in both clinical and non-clinical settings.

Healthcare education traditionally occurs within the confines of each discipline's instructional program, limiting students' knowledge of other disciplines, and potentially impacting healthcare team communications, quality of care delivery, and patient outcomes (D'Amour & Oandasan, 2005; Interprofessional Education Collaborative Expert Panel, 2011). As noted, the World Health Organization (2010) describes Interprofessional Education (IPE) as students from two or more professions who learn about, from, and with each other to enable effective collaboration and to improve health outcomes. Although the concept of IPE is not new, many academic institutions encounter challenges with its implementation due to funding, scheduling concerns, sustainability, as well as faculty and student buy-in (Hinderer & Joyner, 2014; Sandhu, et al., 2015). From a healthcare education perspective, many accrediting bodies have established requirements for interprofessional education in their accreditation standards to promote safe, high-quality, patient-centered care (Accreditation Commission for Education in Nursing, 2013; Berman, 2013; Commission on Accreditation in Physical Therapy Education, 2015; Higher Learning Commission, 2015; Interprofessional Education Collaborative Expert Panel, 2011).

Clarkson College, a private non-profit healthcare higher education institution in Omaha, Nebraska, created an IPE curriculum to meet these industry expectations and standards. A formal IPE course can help students develop and/or improve their interprofessional collaborative skills and subsequently grow professionally to contribute to the overall improvement of patient and client care.

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Theories and definitions related to teams and teamwork have evolved over the past several decades (Alves et al., 2019; McMurtry, 2013; Wiese & Burke, 2019). More specifically, healthcare education has seen a shift toward interdisciplinary and interprofessional models (Baker & Pollard, 2020; Lima et al., 2018; McInerney et al., 2022). Newell and Green (1982) defined interdisciplinary studies as "...inquiries which critically draw upon two or more disciplines and which lead to an integration of disciplinary insights" (p. 24). Although this learning approach takes into account knowledge and perspectives about other disciplines, learners are more likely to work independently and "...draw from their own discipline-specific perspective" (Stokols et al., 2008, p. 79); it may not inherently integrate true collaborative work among students from different disciplines or fields (Lattuca & Creamer, 2005).

The World Health Organization (2010) describes Interprofessional Education (IPE) as students from two or more professions who learn about, from, and with each other to enable effective collaboration and to improve health outcomes. The work of Lima et al. (2018) underscores the distinction between interdisciplinary and interprofessional; it notes that interdisciplinary relates to the knowledge areas of specific disciplines, whereas interprofessional pertains to collaboration among health professionals. Regardless of the differences in definitions and applications, interdisciplinary and interprofessional educational approaches nevertheless share a few common themes: multiple perspectives,

shared knowledge, conflict management, and knowledge integration (McMurtry, 2013).

Interprofessional education embraces teams and team-based learning (Interprofessional Education Collaborative, 2016). Edmonson (1999) asserted that team learning focuses less on individual outcomes; he considered it a dynamic process where team members respond to information by modifying their actions accordingly to optimize the team's outcomes. This point is further supported by Collins' (2004) interactional expertise theory that suggests people can effectively gain new skills through their interactions with experts in certain fields. These interactions, according to Collins and Evans (2015) will allow people to gain familiarity with certain lexicons that are distinctive to specific professional fields, which in turn improve their skill or understanding of that professional skill—outside of their own professional expertise. To a certain extent, interprofessional education addresses some of the limitations of the interdisciplinary approach by emphasizing the value of students learning about one another's professions (Jevne et al., 2021) and a better understanding of their role as a member of the healthcare team (Interprofessional Education Collaborative, 2016). Furthermore, Lionis and Petelos (2018) found that interprofessional care teams benefit patients, providers, and the overall delivery of health care. They also contended that this type of collaborative approach is especially valuable with more challenging patient cases and offers “an opportunity to improve collaboration and performance independently of the context in which they operate” (p. 21).

Framework and Process

In 2016, Clarkson College formed an interprofessional education committee with strategic priorities to explore best practices for interprofessional education. Under the oversight of the Vice President of Academic Affairs, the committee—comprised of faculty and staff members from various departments and instructional design experts—was tasked with all aspects of developing a framework for the IPE curriculum as well as designing and implementing an IPE course.

The Clarkson College framework for interprofessional education was derived from best practices across the IPE landscape. The Interprofessional Education Collaborative (IPEC) Core Competencies for Interprofessional Collaborative Practice (2016) outlined four domains through which interprofessional learning can be achieved:

Competency 1 – Values/Ethics for Interprofessional Practice: Work with individuals of other professions to maintain a climate of mutual respect and shared values.

Competency 2 – Roles/Responsibilities: Use the knowledge of one's own role and those of other professions to appropriately assess and address the healthcare needs of patients and to promote and advance the health of populations.

Competency 3 – Interprofessional Communication: 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.

Competency 4 – Teams and Teamwork: 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 (p. 10).

It is these four domains, or core competencies, that drive interprofessional education initiatives across higher education and clinical settings. Accordingly, the IPE curriculum at Clarkson College maps to the IPEC's domains.

Clarkson College also considered the value of the Quadruple Aim when developing its IPE framework. Sikka, et al. (2015) recommended adding provider satisfaction to the original Triple Aim model developed by Berwick and colleagues in 2008—essentially paving the way for the more recently adopted Quadruple Aim. In addition to the goals of improving the patient experience, advancing population health, and reducing costs, the fourth aim of promoting care team well-being was seen as equally important. Sikka, et al. found that when healthcare workers are afforded positive working conditions, they are likely to find joy and meaning in their work, provide better care, and positively impact the overall patient experience.

Additionally, the development of the Clarkson College's IPE curriculum followed guidance from the National Collaborative for Improving the Clinical Learning Environment (NCICLE) (2018), which asserts that dedicated and coordinated efforts can benefit both learners and patients. Weiss, et al. (2019) contended that while there has always been a need for “communication and teamwork and in clinical environments, the impacts of technology, specialization, access to health information, and new delivery structures require the various health professions to think differently and purposefully about how to simultaneously optimize learning and patient care” (p. 4). As such, it is advantageous to intentionally create opportunities for students to learn about and be exposed to interprofessional education and collaboration prior to entering the

professional clinical environment and non-clinical healthcare setting.

In addition to drawing from literature and recommendations for various IPE-related organizations and agencies, the IPE Committee at Clarkson College also consulted with the Center for Interprofessional Practice, Education and Research (CIPER) at Creighton University in Omaha, Nebraska. The consultation helped the committee with ideas for how IPE could be best implemented at Clarkson College.

Clarkson College Conceptualization of IPE

While the foundation of the Clarkson College IPE model was built to align with clinical best practices, the IPE Committee wanted to construct a model that also enhanced other priority areas that support the college's values and that meet the needs of diverse student learners across a variety of educational settings. As noted, IPE has generally been associated with direct clinical care providers; as a result, the predominant approach of IPE has been centered around in-person, health care focused training. There is great value to this, and yet Clarkson College acknowledged that new ways of conceptualizing and delivering interprofessional education existed. The IPE Committee thus explored alternative avenues for planning and delivering interprofessional learning opportunities that include not only clinical but also non-clinical roles and responsibilities of various professionals. The deliberate pursuit for a more mission-aligned and inclusive interprofessional learning experience resulted in a curriculum with three significant attributes: community involvement, service, and online learning.

- **Community involvement:** The Clarkson College IPE Committee felt strongly about adding more community-based interactions in our interprofessional education and collaboration experiences. Students, faculty, and staff are encouraged to participate in broader opportunities across the community to collaborate with other disciplines—even including those outside of direct patient care (e.g., social work, public health, education, and clergy).
- **Service:** In alignment with the college's mission and values that place great emphasis on service to the community, service learning is integrated into interprofessional education.
- **Online learning:** Because approximately 50% of Clarkson College students are enrolled in various online academic programs, it is imperative to design an IPE curriculum that recognizes the value of interprofessional collaboration across a greater spectrum and provides learning opportunities for both on-

campus and online students. By creating a comprehensive menu of IPE events for students to choose from, as well as allowing students to participate in pre-approved off-campus interprofessional activities, Clarkson College has provided a flexible, student-centered approach to learning.

IPE Course Structure

Clarkson College's IPE 301 Interprofessional Education course, which is offered online, was designed to provide students with educational materials to develop and/or enhance their collaborative skills for better care outcomes. The course involves both synchronous and asynchronous learning opportunities for undergraduate and graduate, as well as on-campus and distance, students and spans students' educational journey at the college. This course is comprised of five modules and is delivered online via the Canvas learning management system.

The first four modules, which are grounded in educational theory, contain didactic lectures, reading materials, and videos. The focus is on IPEC competencies and includes topics related to IPE in collaborative care, the roles and responsibilities of various healthcare team members, effective teamwork and communication, and ethical considerations. These modules must be completed by the end of the first semester of students' enrollment.

Once students have completed the first four modules, they can begin working on module five. This fifth module requires students to participate in IPE events in real-time, face-to-face activities with students and/or professionals from a variety of disciplines and professions. This approach emphasizes real-life experience to complement didactic learning and aligns with the experiential learning theory—a holistic learning process that allows students to apply concepts learned to new experiences (Kolb & Kolb, 2005). Kolb (2014) postulated that experiential learning creates a space for students to reflect on their observations of events and apply concepts learned to their actions. In cases where observations contradict concepts learned, new learning takes place when students reflect and reconcile the contradictions in their decision-making process. IPE events can enhance students' collaborative competencies through their cognitive and behavioral engagement in IPE activities.

Interprofessional education events at Clarkson College are categorized into three categories: knowledge, community, and service.

- **Knowledge** – students expand their knowledge of healthcare professions, health-related topics, collaborative approaches to treatment, or ways to improve outcomes
- **Community** – students learn about the issues and needs of diverse populations within their

community in order to provide patient-centered care

- Service – students engage in civic service activities to live and demonstrate the Clarkson College Values of Learning, Caring, Commitment, Integrity, and Excellence

Students are required to participate in at least one event in each category. While many IPE event offerings are on campus, numerous other approved IPE events are off campus, at various venues across the country as well as online. This is to ensure a good balance of college-sponsored IPE events and community-based learning opportunities for both on-campus and online students. Students' modes of participation also vary; it ranges from active, hands-on involvement to more passive observation and engagement using chat functions and/or small-group breakout sessions.

This work has been exempted from full-board review by the Clarkson College Institutional Review Board as IRB #2021.10.03.

College-Wide Integration of IPE

Since the implementation of the IPE 301 course in Fall of 2018, all incoming Clarkson College students are enrolled in the course during their first semester. Degree-seeking students from all academic program levels—associate, bachelor, master, and doctorate—are required to complete the course to graduate. Although the course carries zero credit, its successful completion is documented on students' transcripts.

Clarkson College IPE Model

The Clarkson College IPE model, as shown in Figure 1, incorporates the inputs from various sources when developing an IPE program: course components, the process for student completion of learning modules, assessment timeline, and intended outcomes. This model also reflects the context within which IPE education and patient/client care are provided.

Assessing Student Core Competencies

The Interprofessional Collaborative Competencies Attainment Survey (ICCAS) is utilized to measure students' interprofessional competency (see Appendix A). The survey, consisting of 20 items, was intended to "... assess the change in interprofessional collaboration-related competencies in healthcare students and practicing clinicians before and after IPE training interventions" (National Center for Interprofessional Practice and Education, 2016, para. 1). The survey was administered as a pre-test at the beginning of the online IPE 301 course modules, a mid-test after the completion

of the first four modules, and a post-test after the completion of IPE experiences and reflections in module five.

Additionally, students' reflection journals—submitted after completing each IPE event—were qualitatively analyzed to discern students' reactions, learning process, and personal development. Students' reflection is guided by a set of questions that was intended to not only help students connect their experience with the course concepts but also to give students context to support the appropriate integration of practical experience into their learning (see Appendix B).

Data Analysis

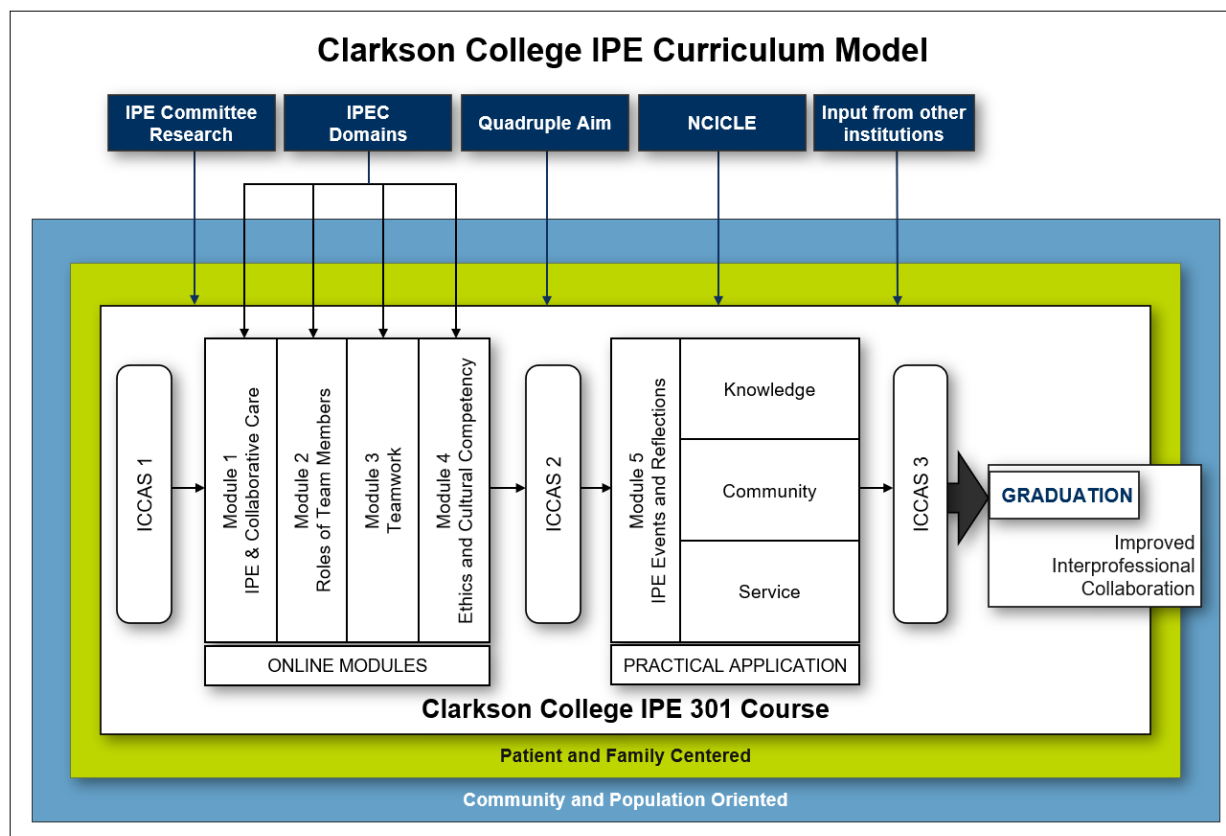
Both quantitative and qualitative data analyses were performed to gain insights into students' perceived competencies and personal development after completing the IPE 301 course. The analyses covered the time period between Fall 2018 and Summer 2021. Although there were 1,308 students already in the IPE 301 pipeline, the data used for these analyses are only for those who have successfully completed the entire IPE online course and have completed all three surveys, ($n = 428$).

Quantitative Analysis and Results

The ICCAS surveys ask students to rate their agreement with 20 statements that cover six dimensions of interprofessional collaboration-related competencies—communication, collaboration, roles and responsibilities, collaborative approach, conflict management and resolution, and team functioning. For the mid-test and post-test, in addition to rating themselves based on the original 20 statements on the ICCAS tool, students also rated themselves on "Compared to the time before the learning activities, would you say your ability to collaborate interprofessionally is..." by responding on a 5-point scale from "Much worse now" to "Much better now."

Descriptive statistics on survey data that was collected on students who had completed the first four online modules (mid-test) showed that 88.6% of students stated that their ability to collaborate was "Somewhat better now" or "Much better now." Only 11.4% reported "About the same" and no one reported "Much worse now" or "Somewhat worse now." In addition, a Chi-Square analysis was used to measure the relationship between students' perceived competency after completing their first four modules and their perceived competency after participating in three IPE events. Results showed that of all of the students who said they were "Somewhat better now" or "Much better now" after completing the first four online modules, 93% of them

Figure 1
Clarkson College IPE Model



perceived additional growth in their interprofessional competency after participating in three IPE events. Even among those students who perceived no additional growth after the first four modules, 56% reported improved collaboration skills after participating in the three IPE events, $X^2(4, N = 428) = 108.2, p < .001$. These findings suggest that the Clarkson College IPE model can improve students' ability to collaborate interprofessionally.

Qualitative Analysis Results

The qualitative analysis reviews critical reflection papers that were submitted by students after they completed an IPE event. A random sample of papers that represented 20% of all reviewed submissions in each category—knowledge, community, and service—were selected and analyzed. The inductive approach (Creswell, 2014) was used to evaluate the paper's contents for themes.

The collated data uncovered significant findings. In general, students found their

participation in IPE events enjoyable. They indicated that the activities helped them learn about various issues in the communities or certain topics in health care. Specific to interprofessional competencies, students expressed their positive experience in teamwork, collaboration, and communication. Finally, in answering the question about how the IPE experience would influence their career, students cited increased awareness about working with other professionals and the ability to communicate better to provide the best care possible.

Implications and Discussion

Three years of cumulative data indicate that Clarkson College's interprofessional education has resulted in improved students' ability to collaborate professionally, in both clinical and non-clinical settings. In addition to the careful planning for the conception of the IPE model, other factors have contributed to the success and/or will sustain the success of IPE at Clarkson College.

Leadership Buy-in for Successful Implementation

In addition to the steadfast dedication of the IPE Committee, the success of IPE course implementation at Clarkson College can be attributed to the full support from executive leadership and buy-in from administrators across all programs. Initial support and ongoing endorsement from the Vice President of Academic Affairs was especially critical in gaining early momentum and subsequent maintenance of IPE initiatives as a top priority of the college. Homeyer, et al. (2018) stressed the importance of support and alignment of goals among academic departments to ensure the viability of IPE programs. Barriers such as inadequate support for institutional leaders, limited or lack of resources, and negative attitudes toward IPE (Sunguya, et al., 2014) have been cited as those that could impede progress in IPE implementation. Institutional endorsements will not only help remove barriers to implementation and execution but also ensure adequate financial and administrative support.

Faculty IPE

Clarkson College recognizes the importance and value of interprofessional education for all members of the College community. Fostering competencies for collaborative practice for faculty and staff members is vitally important to ensure not only their collaborative skill in their job functions but also to effectively facilitate and advocate students' interprofessional activities (Grymonpre, 2016). A similar course with five online modules is required of all faculty and staff. The first four modules are similar to the student modules; however, the fifth module is different. Rather than requiring employees to complete three IPE activities, this module provides resources and ideas for how to integrate or further develop interprofessional learning opportunities within the courses they teach. This course allows for a shared framework that contributes to the overall college culture, as well as the student and employee experience. This approach similarly influences interprofessional collaboration on a number of other initiatives, such as strategic planning, service learning, faculty scholarship, IPE games, skills labs, and simulation activities.

Program Sustainability

Alibasic and Crawley (2018) concluded that leveraging staff and faculty to work collaboratively on various programming aspects is a prerequisite for academic program sustainability. Accordingly, after the implementation of the IPE course and its integration across curricula, the IPE Committee transitioned into the tasks of maintaining the course, assessing course outcomes, communicating the outcomes with the college

community, and identifying more IPE events to support students' immersion in interprofessional experiences to further elevate their interprofessional skills. In Spring 2021, the IPE Committee undertook a rigorous strategic planning process and created a four-team microsystem: curriculum, outcome assessment, professional development, and clinical application. Moreover, the committee is responsible for not only recommending future changes but also articulating policies and guidelines to the overall college community.

Conclusion

The Clarkson College model for integrating IPE in higher education provides academic institutions with a structure and process for educating and evaluating students' knowledge, growth, and perception during the completion of their academic program. This model not only reflects the IPEC competencies but also embraces NCICLE best practices and the vision of Quadruple Aim. Full integration of interprofessional education into all academic program curricula ensures that all graduates have a solid foundation to collaborate effectively with other professions in both academic and professional settings. Outcome data offer insights into students' positive experiences with IPE events and overall improvements in their collaborative skills. The success of the implementation can be attributed to the meticulous planning of the curriculum, support from the institution's administration, faculty engagement, and continuous monitoring.

Author Note

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**Appendix A
ICCAS Survey**

The Interprofessional Collaborative Competency Attainment Scale (Revised)

Using the following scale, please rate your ability for each of the following statements:

1 = "Poor"; 2 = "Fair"; 3 = "Good"; 4 = "Very good"; 5 = "Excellent"

	Before participating in the learning activities, I was able to:					After participating in the learning activities, I was able to:				
	P	F	G	VG	E	P	F	G	VG	E
1. Promote effective communication among members of an interprofessional (IP) team	1	2	3	4	5	1	2	3	4	5
2. Actively listen to IP team members' ideas and concerns	1	2	3	4	5	1	2	3	4	5
3. Express my ideas and concerns without being judgmental	1	2	3	4	5	1	2	3	4	5
4. Provide constructive feedback to IP team members	1	2	3	4	5	1	2	3	4	5
5. Express my ideas and concerns in a clear, concise manner	1	2	3	4	5	1	2	3	4	5
6. Seek out IP team members to address issues	1	2	3	4	5	1	2	3	4	5
7. Work effectively with IP team members to enhance care	1	2	3	4	5	1	2	3	4	5
8. Learn with, from and about IP team members to enhance care	1	2	3	4	5	1	2	3	4	5
9. Identify and describe my abilities and contributions to the IP team	1	2	3	4	5	1	2	3	4	5
10. Be accountable for my contributions to the IP team	1	2	3	4	5	1	2	3	4	5
11. Understand the abilities and contributions of IP team members	1	2	3	4	5	1	2	3	4	5
12. Recognize how others' skills and knowledge complement and overlap with my own	1	2	3	4	5	1	2	3	4	5
13. Use an IP team approach with the patient to assess the health situation	1	2	3	4	5	1	2	3	4	5
14. Use an IP team approach with the patient to provide whole person care	1	2	3	4	5	1	2	3	4	5
15. Include the patient/family in decision-making	1	2	3	4	5	1	2	3	4	5
16. Actively listen to the perspectives of IP team members	1	2	3	4	5	1	2	3	4	5
17. Take into account the ideas of IP team members	1	2	3	4	5	1	2	3	4	5
18. Address team conflict in a respectful manner	1	2	3	4	5	1	2	3	4	5
19. Develop an effective care plan with IP team members	1	2	3	4	5	1	2	3	4	5
20. Negotiate responsibilities within overlapping scopes of practice	1	2	3	4	5	1	2	3	4	5

21. Compared to the time before the learning activities, would you say your ability to collaborate interprofessionally is... (circle one)
1 = Much better now; 2 = Somewhat better now; 3 = About the same; 4 = Somewhat worse now; 5 = Much worse now

The ICCAS was developed by: MacDonald, C., Archibald, D., Trumppower, D., Casimiro, L., Cragg, B., & Jelly, W. (2010). Designing and operationalizing a toolkit of bilingual interprofessional education assessment instruments. *Journal of Research in Interprofessional Practice and Education*, 1(3). Revised item scales and the addition of item #21 were made during a replication validation study by Schmitz, C.C., Radosevich, D.M., Jardine, P.J., MacDonald, C.J., Trumppower, D. & Archibald, D. (2017, *Journal of Interprofessional Care*).

Appendix B Critical Reflection Prompts

IPE 301 Reflection

Interprofessional Education (IPE): When students from two or more professions learn about, from, and with each other.

Your Name:

Program/Department:

Role (student, faculty, staff, or admin):

Today's Date:

Name of My IPE activity or experience:

Date of IPE event:

Was this part of a designated service course at Clarkson? If so, what class?

My IPE category (Service, Knowledge, or Community):

Describe the IPE activity or experience in 2-4 sentences.

Who led/sponsored the event?

What different professions were represented?

What programs or departments participated?

What was your reaction to this experience? What did you enjoy? What might you have changed if you could repeat it?

For two or more of the competencies below, provide examples of knowledge, skills, or attitudes that you gained from the IPE experience:

Interprofessional Communication -

Roles & Responsibilities -

Teams & Teamwork -

Values & Ethical Practice -

Which of the above knowledge, skills, or attitudes have you applied or plan to implement in your current work or school situations, future professional career, or the community at large because of this IPE experience? Please provide specific examples in a short paragraph describing the setting and scenario you have in mind.

How has (or will) this IPE experience improve delivery of services for your customers/students/client(s)? Write a short paragraph and be specific.