Barriers and Facilitators to Enhance Interprofessional Education for Rehabilitation Science Graduate Students

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Abstract

Interprofessional education (IPE) aims to develop healthcare practitioners who work effectively in teams, demonstrate strong communication skills, respect others, and have a working knowledge of the roles and responsibilities of other professionals. Of identified research to date, it is unclear what students perceive as important for effective IPE delivery and learning. The purpose of this study was to identify graduate students' perceptions of facilitators and barriers to learning interprofessional practice using phenomenology. Three semi-structured focus groups were conducted including athletic training, occupational therapy, or speech-language pathology students and the transcripts were analyzed using thematic analysis. Four themes emerged about IPE teaching methods and delivery: (1) addressing roles and responsibilities (2) student collaboration and communication (3) engaging with faculty and (4) enhancing realism and diversity of experiences. The themes suggested that IPE can either facilitate or create barriers for students when learning roles and responsibilities, collaborating, and communicating with fellow students, and engaging with faculty. Enhancing the realism and diversity of represented professionals were perceived as potential facilitators for future IPE sessions.

Keywords

interprofessional practice, interprofessional education, phenomenology, thematic analysis, education, rehabilitation

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Interprofessional education (IPE) aims to develop healthcare practitioners who work effectively in teams, demonstrate strong communication skills, respect others, and have a working knowledge of the roles and responsibilities of other professionals. Of identified research to date, it is unclear what students perceive as important for effective IPE delivery and learning. The purpose of this study was to identify graduate students' perceptions of facilitators and barriers to learning interprofessional practice using phenomenology. Three semi-structured focus groups were conducted including athletic training, occupational therapy, or speech-language pathology students and the transcripts were analyzed using thematic analysis. Four themes emerged about IPE teaching methods and delivery: (1) addressing roles and responsibilities (2) student collaboration and communication (3) engaging with faculty and (4) enhancing realism and diversity of experiences. The themes suggested that IPE can either facilitate or create barriers for students when learning roles and responsibilities, collaborating, and communicating with fellow students, and engaging with faculty. Enhancing the realism and diversity of represented professionals were perceived as potential facilitators for future IPE sessions.

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Introduction

In 2012, the Institute of Healthcare Improvement (IHI) established the Triple Aim as an approach to optimize health system performance (Steifel, 2012). By 2014, this was expanded to become the Quadruple Aim which refers to the four goals of improving population health and patient care experiences, reducing healthcare costs, and promoting healthcare provider and care-team well-being (Bodenheimer & Sinsky, 2014). To attain the Quadruple Aim and truly improve healthcare, it became apparent that an interprofessional approach to healthcare was necessary. Interprofessional practice (IPP) has been shown to improve productivity, maximize patient outcomes, raise staff and clinician morale, diminish healthcare errors, and provide better access to health care within the community (Bachynsky, 2020).

To ensure that new professionals are ready to enter the healthcare workforce and participate in IPP, healthcare students need interprofessional education (IPE) opportunities to gain the necessary knowledge, skills, and attitudes. The World Health Organization (WHO, 2010) defines IPE as when two or more providers from different professional backgrounds learn about, from, and with each other. IPE is essential to develop collaborative health partnerships in which teams provide comprehensive, safe, effective, and efficient services in a wide range of healthcare settings. IPE is required by multiple healthcare accreditation bodies including the Accreditation Council for Occupational Therapy Education (ACOTE, 2018), Commission on Accreditation in Physical Therapy Education (CAPTE, 2020), Council on

Academic Accreditation in Audiology and Speech-Language Pathology (CAA, 2020), and Commission on Accreditation of Athletic Training Education (CAATE, 2020). As recommended by the Interprofessional Education Collaborative (IPEC), IPE should aim to develop healthcare practitioners who work effectively in teams, demonstrate strong communication skills, respect others, and have a working knowledge of the roles and responsibilities of other professionals (IPEC, 2016).

Multiple models identify curricular best practices for IPE based on intentional curricular design and authenticity, such as seminars, case-based scenarios, clinical simulations, and immersion in clinical environments (Arth et al., 2018; Stiefel & Nolan, 2012). Despite these models, IPE curricula are quite variable among institutions and no educational method has been shown to be more effective compared to others (Fox et al., 2018). It is recommended that students start learning foundational IPE principles early in curricula and apply this knowledge over time to more complex cases and varying contexts (Abu-Rish et al., 2012; Hammick et al., 2007). Reeves et al. (2013) suggest that researchers should report theoretical bases, specific teaching methods, and relevant outcomes to allow better comparison across studies. Without more standardized research reporting, it is difficult to make comparisons of findings across research studies.

Of identified research to date, it is unclear what graduate health professional students perceive as facilitators and barriers to the effective delivery and learning of IPE. The purpose of this study was to identify students' perceptions of facilitators and barriers to learning knowledge, skills, and attitudes needed for interprofessional practice.

This study was conducted at Moravian University, a small private institution in the northeastern United States with the Carnegie Classification of postbaccalaureate with other professional programs. The study used phenomenological inquiry to examine the lived experience of rehabilitation science graduate students' perceptions of IPE. The participants were recruited from the following programs: Master of Occupational Therapy (OT), Master of Speech-Language Pathology (SLP), and Master of Athletic Training (AT). All three programs are included within Moravian University's interprofessional School of Rehabilitation Sciences. Within the School, IPE is provided as a series of interprofessional two-hour seminars embedded in programmatic curricula over the course of five semesters. These seminars use combinations of small team problem-solving exercises, case-based activities, clinical simulations, and reflective presentations and are based on experiential learning and reflective practice. The objective of the IPE program is to facilitate student learning and reflection on the IPEC competencies. The general content of the IPE sessions for the first two semesters of the five semester IPE curriculum is described in Table 1.

Table 1
Interprofessional Seminar Descriptions

Semester 1	
Introduction to IPE	Students learn about the roles and responsibilities of multiple professions through participating in a team-based scavenger hunt. Following the scavenger hunt activity, students participate in a guided debriefing that highlights effective teamwork and communication skills. Students respond in writing to a reflective prompt.
Language Barriers and Cultural	Students learn about cultural competence and language barriers by participating in various team activities. These team activities include clinical simulation video

Competence	vignettes, implicit bias training, cultural competence surveys, case studies, and student reflections.
LBGTQ+ Safe Zone Training[20]	Students learn about LBGTQ+ topics, including personal gender pronouns. Students listen to a guest speaker (who identifies as a cisgender gay man) who discusses his experiences with coming out and the challenges he encounters as a gay man. Students also complete a team activity on societal privilege and reflect on the session.
Patient Adherence	Students learn to work with patients who are not fully adherent to interprofessional treatment plans. By working through a series of case studies, students learn how to appreciate patient context and goals while being respectful of patient choices during the provision of patient/ client-centered care.
Vital Sign Collaborative Practice	Students learn about effective teamwork and communication by completing a hands-on assessment of vital signs. Students review a case scenario (provided prior to the session) and then work in pairs to complete a hands-on assessment of vital signs using low-fidelity mannequins. Students then participate in a debriefing where they reflect on the case scenario and their assessment performance, receive feedback from instructors, and discuss the necessity of effective teamwork and communication in clinical care.
Semester 2	
History Taking	Students learn about the processes involved in efficient and effective history taking and gain an awareness of relevant information needed by other disciplines. Students complete detailed history of a standardized patient with neurologic dysfunction in an outpatient setting by working together in teams of three to gather the required clinical information. The students work as a team to debrief each other about the information gathered to reach a successful patient outcome.
Interprofessional Team Meeting	Students learn about the dynamics of interprofessional team meetings. Students watch an interprofessional team video vignette in which healthcare providers discussed the progress of an outpatient patient with a traumatic brain injury displaying both positive and negative interactions. Students discuss the behaviors of the team members and reflected on how the interaction could have been improved.
Developmental Assessment	Students learn about the interaction of the interprofessional team when exposed to complex cases with psychosocial implications. Students work through a three-part case focused on the life of a young child diagnosed with cerebral palsy and her mother. This case includes details relevant to interprofessional practice and many psychosocial aspects of the family which influence care. The session is followed by student reflection.

Students were eligible to participate if they were at least 18 years of age and if they were currently enrolled in the 2019 cohort of graduate OT, SLP, or AT pre-professional programs at the time of the study. The primary investigator sent a recruitment email to all 71

students eligible to participate. The recruitment email included a link to a Qualtrics survey for students to indicate their electronic informed consent.

Total eligible students enrolled in each pre-professional cohort were 32 OT, 24 SLP, and 15 AT respectively. The mean age with standard deviations for the full eligible sample was 26.5 ± 2.8 years. The percentage of female participants for the full eligible sample was 87.3%. Demographic information was not collected for focus group participants.

Three focus groups were conducted with a total of four OT, five SLP, and nine AT students. The three focus groups had seven, five, and six participants respectively, including at least one OT, SLP, and AT participant in each focus group. Interprofessional focus groups were conducted after students had completed the second semester of programming to better understand their perceptions of IPE. The timeframe allowed participants to have sufficient exposure to IPE prior to participating in the study. Additional focus groups were not conducted later in the curriculum due to the challenges of the COVID-19 pandemic.

Focus groups were facilitated by a moderator (TG) and a research assistant. The focus group moderator was an investigator who had experience with qualitative interviewing techniques. Both the moderator and the research assistant were previously unknown to the participants. Utilizing a moderator and research assistant unfamiliar with the participating students helped encourage participants to express their experiences and perspectives openly. The moderator used a focus group facilitator guide which included semi-structured questions and follow-up probes (Table 2). The focus group moderator documented field notes after each focus group.

Table 2
Focus Group Facilitator Guide

Introductions
- To get started, can everyone briefly introduce themselves with which graduate program you are part of (AT, OT, SLP) and if you had had any exposure to interprofessional education or interprofessional healthcare prior to starting your program here?

Interprofessional Experiences
- Thinking of the interprofessional education experiences in which you have *already participated*:
    - Can you describe an instance when that interprofessional education was "*successful*?"
        - What helped or facilitated the success of interprofessional education?
        - How often was the interprofessional education successful?
    - Can you describe an instance when that interprofessional education was "*unsuccessful*" or "*not as successful as you would have hoped*?"
        - What challenged or diminished the success of the interprofessional education program?
        - How often was the interprofessional education not as successful as you would have hoped?
- Thinking more broadly about *all* of your experiences, what has *helped* you develop interprofessional knowledge, skills, and attitudes:
    - Which processes or opportunities *have been beneficial* to your learning about interprofessional knowledge, skills, and attitudes?
- Thinking more broadly about *all* of your experiences, what has *hindered* you from developing interprofessional knowledge, skills, and attitudes:
    - Which processes or opportunities *were not helpful* to your learning about interprofessional knowledge, skills, and attitudes?

Future Recommendations
- What would you recommend changing to help you and other students further develop interprofessional knowledge, skills, and attitudes:
  - In an ideal world, what would be in place to help you and other students develop interprofessional knowledge, skills, and attitudes?
- What would you recommend to the faculty to best foster interprofessional knowledge, skills, and attitudes in the future?
- What would you recommend to future students to best foster interprofessional knowledge, skills, and attitudes?

Conclusion and Closing
- Would you like to share anything else about your experiences with interprofessionalism and interprofessional education?

Each focus group was conducted in person, lasted approximately one hour, and was audio-recorded using a standard digital audio recorder. The focus groups were transcribed verbatim after the session using Dedoose. The research assistant listened to each recording and corrected errors in the transcription as needed. To minimize bias, researchers reflected on their preconceived knowledge and perceptions about IPE from their perspective as educators using bracketing. Data from the transcribed focus groups were qualitatively analyzed using thematic analysis (Guest et al., 2012).

Thematic analysis uses a defined, iterative, consensus-building approach that results in a rich description that stays close to participants' words (Guest et al., 2012). One researcher (KW) completed open structural coding for each focus group and developed structural code definitions based on the main topics included in the moderator guide. Then, this researcher completed coding for content, identifying codes for the main ideas expressed by each participant and developing operational definitions for each code. Codes were then grouped into categories. The researcher organized all categories, codes, and operational definitions into a code book. A second researcher (MR) reviewed all transcripts and structural coding and completed coding for content using the code book established by the first researcher. Two researchers (MR, KW) discussed the categories, codes, and operational definitions before coming to a consensus on the final theme labels and definitions. The focus group moderator reviewed all categories, codes, and operational definitions. A codebook and audit trail were maintained throughout all stages of data analysis. Using multiple researchers with an iterative approach to analysis was used to help ensure the credibility and confirmability of the qualitative findings.

Results

Four themes emerged about IPE teaching methods and delivery: (1) addressing roles and responsibilities, (2) collaborating and communicating with other students, (3) engaging with faculty, and (4) enhancing realism and diversity of represented professions.

Addressing Roles and Responsibilities

Participants identified that participating in IPE helped them understand the roles and responsibilities of multiple healthcare professionals and the importance of role clarity to enhance their ability to work interprofessionally. A key facilitator to understanding other healthcare professionals was realizing that multiple healthcare professionals' roles and responsibilities can be united by a shared focus on patient-centered goals and outcomes. One participant described their experience of realizing this shared focus as follows:

> I thought just the experience of working hand in hand with students from different disciplines really helped me see that we all want to affect the patient in a positive way, even though we're doing it in our own perspective… That to me was really interesting. There wasn't necessarily a topic that I thought was successful, but just interacting with SLPs and OTs, we got to see what exactly they're looking for and how they're going to make an impact on the patient. And we as ATs also have the same goal, but just in a different scope. (Focus Group #1, Speaker #6)

Participants also discussed barriers to learning roles and responsibilities, particularly related to a lack of prior knowledge or misunderstandings of other healthcare professions. Some participants recommended adding a general introduction to multiple healthcare professions at the beginning of the IPE seminar series. Participants also identified that their and others' bias and stereotypes of other healthcare professionals was an initial barrier to learning. One participant highlighted the positive impact that participating in IPE had had on their biases regarding other healthcare professions:

> I think there's been benefits to communicating with others in different programs and learning exactly what their program does and your profession… because there's a lot of biases out there. So you know, prior to meeting these other students, I have these biases about their programs as well and they did [about] ours. But having those conversations and sitting down as like what we actually do and what we are fully capable of doing or a wide variety of work that we can do in each of our professions, I think has been really helpful for us. I mean, at least for me, I've learned a couple of things. (Focus Group #2, Speaker 1)

Student Collaboration and Communication

Many participants observed that their IPE experiences enabled them to collaborate and communicate with other students in small groups to increase their engagement. As shared by one participant, "when we're in those small…intimate small groups, it's easier to share because there are not that many people" (Focus group #2, Speaker #3). Another participant added to this viewpoint suggesting that comfort levels were higher in the smaller groups:

> When we were broken down into our smaller groups of six to eight to ten, you were more comfortable with each other and you know, maybe not afraid to ask certain questions that we didn't know how they would come off. [Because] then we saw each other as friends. So we felt like we could ask questions even [if] sometimes they don't even know how to phrase them and we don't want to say them the wrong way. But it was more of that common ground where we felt like we could share things back and forth. (Focus Group #2, Speaker #2)

However, some students also perceived classroom-based IPE seminars as being insufficient to fully prepare them for interprofessional communication within healthcare. Students reported that they gained some benefit from practicing and building upon communication skills in the IPE seminar environment. However, students expressed that this needed to be combined with authentic experiential or clinical education opportunities to put those communication skills into practice.

Engaging with Faculty

Another theme that emerged from the data was the value participants derived from engaging with multiple faculty in unique and varied ways. Participants valued faculty members' guidance and feedback, particularly during IPE seminars which incorporated role-playing activities. Furthermore, the participants preferred interactions with varied instructors from different programs. As relayed by a participant, "being able to get different perspectives from different faculty members other than those in our own discipline was really interesting because they gave a lot of novel feedback that we may not have gotten from… seeing the same professors" (Focus Group #3, Speaker #3).

Participants acknowledged that delayed feedback from faculty members served as a barrier to IPE. One participant recommended receiving more immediate and specific feedback:

> I think that having better examples and better immediate feedback would tremendously benefit us and our personal skills too because this is what we're trying to work on in terms of IPE. It's not our clinical skills necessarily. That's what we learn in our own respective departments. (Focus Group #1, Speaker #6)

Enhancing Realism and Diversity of Experiences

Participants perceived that they benefitted more from IPE seminars which incorporated realistic scenarios or guest instructors from varied disciplines. Participants value learning from practicing clinical experts who they perceive as more connected to. Participants recommended increasing the diversity of professions represented in IPE. For example, one participant shared:

> Why not look at people or professionals outside of all of our professions? Like you were saying with doctors, and teachers, we may run into all of these other professions that are out there rather than trying to fit us in these boxes when there are maybe only three boxes that we may all be a common ground for. Or even…truthfully like family members of somebody who is going through rehab, like talking to a family who's gone through the whole working with all of our professions and their suggestions to us going into the field. (Focus Group #3, Speaker #3)

Discussion

The four identified themes suggested that IPE can either facilitate or create barriers for students when learning roles and responsibilities, communicating, and collaborating with fellow students, and engaging with faculty. Participants perceived that realistic interactions with other professionals were essential to successful IPE which concurs with prior research (Brietbach et al., 2020; Cooper et al., 2019; Goldberg et al., 2015; Thistlewaithe & Moran, 2010). These findings have similarities with Smith et al. (2018) who studied IPE with varied disciplines and identified qualitative themes of collaborating without judgment of other, learning about the roles and responsibilities of their professions and those of other professions, learning about themselves, and communicating with different personalities.

The identification of implementation and delivery methods that minimize barriers and maximize facilitators can theoretically result in better preparation for students as they transition from students to practitioners. Implications from this research on future IPE include recommendations for better methods of teaching roles and responsibilities, an emphasis on

allowing student collaboration and cooperation in small groups, higher levels of engagement with faculty, and increased use of community partners and clinical practitioners to promote the realism of the sessions.

Learning about roles and responsibilities may impact student interactions with future patients and other healthcare professionals as they internalize what their role is within the healthcare team. Research suggests that interprofessional attitudes on roles and responsibilities are a relatively stronger predictor of IPE outcomes (Ganotice et al., 2022). A true understanding of role clarity of other team members can maximize patient outcomes, improve efficiency, and result in shared decision-making (IPEC, 2016; Weiner et al.,2020).

Wynaczuk et al. (2019) found that health profession students strongly identify with their chosen profession and may demonstrate negatively stereotyped attitudes toward other health professionals. Conroy (2019) demonstrated that some clinicians fear a decrease in professional identity with IPP. Kolb et al. (2017) found that students tend to have concerns about stereotypes and biases despite IPE. As delivered in the described curriculum, delineation of roles and responsibilities may have widened students' perspectives of the contributions of other professionals to the interprofessional team and to the provision of patient-centered care in a less biased manner. Small IPE group sizes were beneficial so that communication between members could be more open. Prior research on student reflections has recommended smaller groups to facilitate shared learning (Goldberg et al., 2015). Participants reported that they were more comfortable sharing their thoughts and perspectives in these more intimate groups which further adds to the literature that smaller groups may be more effective.

Findings are consistent with prior research that students have positive attitudes toward IPE as a way of learning effective communication and teamwork (Arth et al., 2018). The ability to collaborate with classmates and colleagues fosters trust and strong communication between team members, positively impacting well-being, and satisfaction. Conflicting findings by Browne et al. (2019) suggest that students' attitudes toward teamwork and collaboration were not more positive when comparing more comprehensive IPE programs to seminars in the short term. However, this was not apparent over the long term. Theoretically, future clinicians may be more committed to IPP because of well-designed engaging educational preparation (Arth et al., 2018). Ultimately, students who are well-prepared to collaborate with other healthcare professionals can improve IPP and help achieve the goals of the Quadruple Aim (Bodenheimer & Sinsky, 2014).

Participants clearly identified that engagement with faculty was essential to maximizing both verbal constructive criticism and supportive feedback from faculty. The findings align with Breitbach et al. (2020) who suggested that engaging students and encouraging instructors to provide formative student feedback during IPE sessions may be important in promoting effective IPE. Furthermore, Kerry et al. (2021) found that students preferred faculty facilitators with minimal professional bias and more organizational preparation. Technical competency was seen as a less relevant characteristic for effective IPE educators in this same study.

Prior research has demonstrated students prefer IPE to be more realistic, hands-on, or case-based with a direct link of IPE to IPP (Brietbach et al., 2020; Cooper, 2019; Thistlewaithe & Moran, 2010). Findings suggest that increasing the realism of the IPE experiences by inviting healthcare professionals from the community to participate was perceived as an enhancement to IPE. Expansion of the types of healthcare professionals involved in IPE was also perceived as important by participants.

Limitations of this study include a small sample size at one institution at a single time point, thus limiting transferability across rehabilitation programs. Another limitation is that the participants were not followed throughout the entire IPE curriculum due to challenges associated with COVID-19. It is unknown if the findings can be extrapolated to IPE including other healthcare disciplines or at different timepoints in curricula. Further research about

students' perceived facilitators and barriers to IPE across a curriculum may optimize student learning about interprofessional care. Repeating the study with greater implementation of the perceived facilitators and measuring changes in student perceptions may also be fruitful.

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