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Interprofessional Education and Practice: Perspectives from Students in Speech-Language Pathology and Recreational Therapy

Cover Page Footnote

The authors would like to acknowledge three groups for their participation and positive impact on IPE/IPP: a) participants and their families in the CLS program b) Catherine Gooch, Director, CLS program, the other clinical faculty from RT, PT & OT, and the Dean's office. c) SLP graduate students in the AAC Research Lab at IC d) Center for Faculty Excellence (CFE) at Ithaca College

Introduction

This research will provide faculty, clinical educators, and students with a better understanding of the unique collaboration between the disciplines of speech-language pathology (SLP) and recreation therapy (RT) during an interprofessional clinical experience. Students in the health professions may encounter interprofessional education and practice (IPE/IPP) in a variety of ways across classroom, community, and clinical settings. Programs in higher education that promote IPE/IPP, should strive to include the following core competencies: values/ethics, roles/responsibilities, interprofessional communication, and teams/teamwork (McCarthy & DiGiovanni, 2017). It is important to understand how pre-professional students acquire knowledge in these key competency areas and consider applying these skills in their future professional careers.

According to the World Health Organization (2010), interprofessional education and practice (IPE/IPP) is a method of education that involves interactive learning opportunities for professionals and pre-professional students to engage and learn from, with, and about one another. Brown et al. (2018) discusses the importance of providing interprofessional learning experiences for students so they can be prepared to effectively engage with a diverse range of professionals while also having a better understanding of the benefits and challenges of interprofessional practice. The World Health Organization (2010) promotes the need for collaborative training opportunities in higher education since pre-professional students will eventually engage with a wide range of interprofessional teams across community, educational, and health care settings.

IPE/IPP can foster collaboration and provide the necessary infrastructure for students to better understand their unique and shared roles and responsibilities as well as the potential impact of their services on clients and caregivers (Lie et al., 2016). Furthermore, IPE/IPP supports students in their journey of learning critical skills including leadership, interprofessional collaboration, conflict resolution, and gaining an understanding of the roles and responsibilities of different professions. Brewer et al. (2016), discussed that IPE/IPP provides students with an opportunity to appreciate the range of expertise in all team members and realize when one person may be better equipped to lead the team. In this type of collaborative leadership, shared power and authority may shift towards individuals with more specific knowledge and skill as opposed to the defined professional role of the individual (Brewer et al., 2016).

Freeth et al. (2002) evaluated how IPE/IPP impacts students and why it is imperative to focus on changes in knowledge and skills and how these changes and challenges in learning may eventually lead to positive outcomes for clients and their families. In some instances, students learning within IPE/IPP clinical settings may experience conflict as they engage with each other and develop or modify intervention plans. Thus, it is important for students to process and debrief with clinical supervisors and each other in a non-threatening manner as it can be beneficial in finding common ground and ultimately providing better client care (Brown et al., 2011). IPE/IPP experiences can provide rich lessons for pre-professional students across areas of conflict, collaboration, and leadership while also providing clinical supervisors and faculty with 'real-world' scenarios to debrief, prioritize, and consider the perspectives of others.

Pre-professional students in recreation and/or speech-language pathology may have the opportunity to work on collaborative teams with music therapists, physical and occupational therapists, social workers and mental health professionals, and/or other medical professionals such as physicians and nurses. Previous research in IPE/IPP has investigated the collaboration between occupational therapy and physical therapy (Furze et al., 2008), SLP and music therapy (Geist et al., 2008), SLP and medicine (Burns et al., 2012; Neubauer et al., 2014), and SLP and dietetics and nutrition (Ludwig et al., 2019). Wallace et al. (2017), found that interprofessional activities may elicit positive changes in student perceptions towards older adults and other professions.

Furze et al. (2008) determined that using real world settings fostered positive experiential learning opportunities for OT and PT students in addition to having a positive impact on their attitudes about the professional scope and purpose of each discipline. Also, Geist et al. (2008) found increased classroom engagement and participation for a young non-verbal child with a global developmental delay, due to the collaborative work between music therapists and speech-language pathologists. Burns et al. (2012), concluded that patient-provider communication frameworks can be used to educate pre-professional SLP students to support their ability to effectively engage with medical teams to ensure the delivery of high-quality services.

Neubauer et al. (2014) described a successful IPE framework at Seton Hall University with opportunities for SLP students to collaborate with other health and medical science graduate programs such as athletic training, occupational therapy, physician assistant, and physical therapy. A task force developed the IPE framework with objectives focused on supporting SLP students to see themselves as part of a global healthcare community and to understand the impact of IPE on patient-centered care. Due to the successful infrastructure of the IPE framework, the SLP program also added extensive IPE-related content to its courses, clinical experiential training opportunities, and community service activities.

There is limited research focusing specifically on the disciplines of SLP and RT collaboration despite overlapping intervention areas such as social-pragmatic skills, cognitive and executive functioning skills, and functional communication skills. Abbott-Anderson et al. (2018) described a one-day IPE/IPP experience focused on individuals living with Alzheimer's disease and/or other associated dementias. In the program, students from SLP, nursing, and recreation collaborated to provide resources and education to patients and their caregivers about community resources focusing on reducing isolation and stress, engaging in leisure activities such as gardening, and exploring ways to improve physical wellness and health. In another study, Daugherty et al. (2020) investigated a training program targeting preservice adaptive physical education (APE) teachers who worked at a summer camp for children with disabilities. SLPs provided the training for the APE teachers who demonstrated significant gains in increasing peer engagement between campers.

Both active and passive recreational activities present with a wide range of communication opportunities and interactive scenarios that can foster social relationships and full participation for people with different types of disease and/or disability such as autism spectrum disorders, aphasia, and/or traumatic brain injury (McCarthy & Hajjar, 2017). Passive activities such as playing cards, book clubs, and arts and crafts provide important opportunities for socialization and cognitive stimulation. On the other hand, some individuals prefer more active pursuits as professionals in

recreation have eliminated many physical barriers that previously existed in outdoor activities such as skiing, paddling, and cycling. Specialized equipment (e.g., bi-ski, tandem kayaks, outriggers) provides individuals with significant physical disabilities and complex communication needs an opportunity to fully participate with support from trained volunteers and family members. Both passive and active recreational activities, can offer meaningful experiences for people with disabilities as leisure interests are often highly motivating, provide enjoyment, and occur across natural contexts (Hajjar et al., 2019).

There is limited information and evidence about how to support and enhance communication during recreational activities for people with disabilities and complex communication needs. Research in this area is important as it will bring attention to the disciplines of SLP and RT with a focus on creating broad guidelines and recommendations for collaboration. The scope of practice for SLP and RT intersects across areas in pragmatics, communication, and quality of life. Gathering perspectives from pre-professional SLP and RT students may inform faculty and clinical supervisors about effective strategies for mentoring and methods to infuse communication supports and strategies in the context of a recreational activity.

The Center for Life Skills (CLS) is a community clinic dedicated to providing high quality interprofessional rehabilitation services to meet the individual needs of adult participants while providing a rich clinical experience for pre-health professional students. Faculty and students from physical therapy, occupational therapy, speech-language pathology, and recreation therapy collaborate to offer post-acute rehabilitation to adults who have experienced a stroke. The primary focus of the CLS program is to offer students a genuine IPE/IPP experience while also providing clients from the local and regional area an opportunity to enhance their quality of life, improve functional skills (e.g., communication and cognitive skills), and gain greater independence in activities of daily living.

The program runs 3 days a week, for 3 hours per day for approximately 14 weeks in the fall and spring semesters. Students have an opportunity to provide both individual and small group sessions with students from other disciplines under the supervision of certified and/or licensed faculty across the four disciplines. During the program, the undergraduate and graduate students have multiple opportunities to interact and engage with other participants, family members, faculty, and student clinicians on their team (e.g., team, family, and goal development meetings). During the clinical experience, students conduct screening and intervention tasks while working collaboratively to plan and implement individual, small, and large group activities as well as community reintegration outings.

The focus of this research was to gather perspectives from students in RT and SLP who participated in an interprofessional clinical experience. Specifically, the research question for this study was: What were the perspectives and experiences of SLP and RT students before, during, and after a 14-week clinical experience providing collaborative therapeutic services to adults post-stroke across the four primary interprofessional core competencies (i.e., values/ethics, roles and responsibilities, communication, and teamwork).

Method

Qualitative methodology was used to gather the lived experiences and perspectives of the SLP and RT students. Approval was granted from the Institutional Review Board (IRB) at Ithaca College. Focus groups occurred before and after the IPE/IPP clinical experience. In addition to the focus groups, the students used an online forum to provide typed responses to question prompts about their IPE/IPP learning experiences over the course of 14-weeks. The research team consisted of the three authors and two graduate research assistants. The first author served as the moderator for both focus groups, while the second and third authors served as clinical supervisors for the students participating in this study.

Participants. Pre-professional students from SLP and RT who enrolled in the Center for Life Skills (CLS) program were invited to participate in the research study through purposive sampling (Patton, 2002). A total of eighteen SLP and RT students in the program were provided with information about the study and directed to email the principal investigator to express interest in participation. The first four students from SLP and RT who emailed the principal investigator were selected for the study.

All the students were female, full-time undergraduate or graduate students and it was their first time participating in the CLS clinical placement. The four students from RT were all seniors and had previously conducted service-learning tasks in the local community under the supervision of certified therapeutic recreation specialists. On the other hand, SLP students were either in their first or second year of graduate school and had previously engaged in clinical experiences across educational and community settings. Two of the RT students reported prior interprofessional experience in a community care setting and two of the SLP students reported prior interprofessional experience in a primary school setting. All students selected for the study were planning to graduate and enter the workforce at the conclusion of the academic year of the study. Each of the eight students received a \$25 gift card after completing the study.

Research Design. Focus groups and an online forum were used to gather the perspectives of the students from recreational therapy and speech-language pathology as they engaged in an interprofessional clinical learning experience (Creswell, 2007). The aims of the study were associated with social phenomenology (Patton, 2002) as the students expressed how they developed meaning from the experience and what benefits and challenges they encountered along the way.

Since limited research exists between the disciplines of SLP and RT, qualitative methodology was selected to discover how students from these specific areas learn and grow together while providing clinical service to adults post-stroke. Gathering focus group data provided a structured approach for the investigators to learn more about these professions and the nature of their collaborative work. The purpose of this study was to explore the unique interprofessional partnership between SLP and RT while also providing initial information about how these areas may collaborate both in higher education and the future work force.

Materials. Two audio recorders were used to capture the focus group discussions. In addition, topic areas and discussion questions for the pre- and post-focus groups were developed based on the Interprofessional Education Collaborative (IPEC) core competencies (McCarthy & DiGiovanni, 2017). Separate questions were developed for the online discussion forum. See supplemental materials for topic areas and discussion questions used in the focus group and examples of sample questions used in the online forum. Microsoft Excel was used to store, organize, and analyze all focus group and discussion forum data.

Procedures. Data collection for this study occurred during one fall semester. The eight students participated in a pre-focus group, which occurred one week before the start of the 14-week clinical experience. The same eight students also participated in the post-focus group one week after the completion of the 14-week clinical experience. Both audio-recorded focus groups were approximately 60 minutes and facilitated by the first author. In addition to the focus groups, students also provided written responses to discussion questions presented in an online forum.

The online forum occurred three times during the 14-week clinical experience. Prior to each online forum, the students received an email that indicated the forum was open and they had two weeks to answer question prompts, contribute comments, and/or respond to other students. Using the forum, the eight students were asked to provide examples in ‘real time’ related to their clinical experiences in the CLS program. Forum 1 presented questions about challenges, roles, and responsibilities, Forum 2 focused on communication, collaboration, and leadership, and Forum 3 focused on the changes in student learning, including the future impact of IPE/IPP. See supplemental materials for question prompts used in the online forum.

In addition to the one individual session each week for 60 minutes, the SLP students also participated in a co-treatment session with RT students for 60 minutes, and one 30-minute co-treatment session with PT students. Similarly, the RT students conducted one individual session each week for 60 minutes, a co-treatment session with SLP students for 60 minutes and a co-treatment session with OT students for 30-45 minutes each session.

Data Collection and Analysis. Data collection occurred during two focus groups with SLP and RT students. In addition, written responses were gathered remotely during the clinical experience using an online forum in which students responded to discussion questions. The data from the focus groups was analyzed separately from the data gathered in the online forum. All data was analyzed by the three authors with additional analysis conducted by two graduate research assistants.

Student perspectives from both focus groups were transcribed and analyzed using a thematic analysis (Creswell, 2007). Transcripts from each focus group were read and reviewed by the first author and a graduate student research assistant. Data from each focus group were first reviewed independently prior to comparison and analysis. During the analysis phase, the focus group data was organized into the smallest units of information that could informatively stand-alone (Kvale & Brinkman, 2009). The units of information were called “thought units” in the form of a short phrase, sentence, or multiple sentences that did not make sense if separated. The first author and a graduate assistant reviewed a total of 415 thought units and generated 5 initial thematic areas for each focus group.

Next, the thought unit data was analyzed independently by the second and third authors. As a result of deeper analysis, revision, and discussion, an additional theme emerged from this iterative process. In the end, six primary themes were identified when comparing the pre- and post-focus group data. Thematic development was based on the process of concept driven coding and similarities observed across the final 378 thought units in both focus groups. Thirty-seven of the original 415 thought units were deemed non-codable. The coding procedure for the thought units was influenced not only by the initial topics presented in the focus groups, but also as a result of an iterative revision process used by the authors and research assistant. After reviewing and categorizing the thought units, operational definitions for primary themes were finalized. See supplemental materials for operational definitions.

During the clinical experience, information was also collected from students remotely using an online forum embedded in a password protected learning management system. The purpose of the forum was to gather information from the students as they were engaged in the IPE/IPP experience. A content analysis (Mayan, 2001) was applied to the written data from the online forum with a focus on identifying, categorizing, and summarizing key concepts and themes. Students' typed responses were independently read and reviewed by the first author and two graduate research assistants. During the analysis process, the research team identified persistent phrases and ideas from the online forum data and then categorized the information based on the question topics. The process for categorization focused on finding examples that demonstrated how the students were using IPEC core competencies (McCarthy & DiGiovanni, 2017) to work collaboratively, consider leadership roles, and reduce barriers.

Transparency and Rigor of Data Analysis. Triangulation of data occurred through external audit and member check. A graduate student not familiar with the data, independently reviewed and coded 20% of the thought units across the six themes from the pre and post focus groups. Cohen's kappa (K) was used to determine inter-rater reliability and yielded a level deemed to be highly acceptable ($K = .90$). During the member check process, the interpretation of the data went back to the eight students to provide them with an opportunity for validation and feedback (Creswell, 2007). The first author sent an email to each of the students with a summary of the six primary themes. Six of the students responded and verified that the summary accurately represented their perspectives and comments relative to the CLS clinical experience. The students did not provide any additional comments or feedback.

Results

Results are presented from two data sources: pre- and post-focus groups and the online forum. Over the course of two focus groups the students shared their perspectives across a range of topic areas. Table 1 contains primary themes, subthemes, and examples from the pre- and post-focus groups. Thematic analysis revealed the following six themes: roles and responsibilities, interprofessional communication, collaborative teamwork, values and mutual respect, challenges to IPE/IPP, and benefits/impact of IPE/IPP. For more detailed information, see supplemental materials for the specific number of thought units in each theme and/or subtheme.

Table 1*Primary Themes, Sub-Themes, and Examples Discussed by Students in the Focus Groups*

Themes	Sub-themes	Examples
Roles and responsibilities	SLP Focus	Communication, language Pragmatics
	RT Focus	Strengths based approach Mental health and wellness
	Overlap	Counseling Quality of life
	Other disciplines	Role of PT and OT Previous experience
Interprofessional communication		Face to face Digital communication Online discussion forum
Collaborative teamwork		Academic experiences Previous clinical settings Emerging leaderships skills
Values and mutual respect		Listening, asking questions Recognize scope of practice Peer to peer education
Challenges to IPE/IPP		Planning for therapy Overlap Communication with team
Benefits and Impact of IPE/IPP		Client progress Student learning and growth Preparation for career

Roles and Responsibilities. This theme contained the most thought units when compared to the five other themes. A total of 171 thought units were associated with this theme, which is equal to approximately 45% of the total thought units across the primary thematic areas. Thought units under the theme of roles and responsibilities were organized into four subthemes: SLP focus, RT focus, SLP and RT overlap, and other disciplines.

During the initial focus group, the RT students defined their discipline and discussed how recreation and leisure interventions focus on improving social/emotional skills and overall wellness, including sleep, exercise, and diet. The SLP students also talked about specific areas of intervention such as language and pragmatic skills as well as strategies to improve auditory comprehension. The students recognized some areas of overlap but also differences in methods of assessment and treatment. An SLP student shared, “I think social skills overlap, but it’s interesting how differently we focus on it, social is a big area for both of us, it seems recreation takes what we are working on and expands it to more functional situations.” The RT and SLP students also talked about their experiences with professionals from PT and OT during previous clinical rotations, observations, or other service-learning opportunities in healthcare or education.

Also, during the pre-focus group, students defined their scope of practice and asked questions to clarify shared roles and responsibilities that overlapped between the two disciplines. One RT student shared that, “Our therapy should be about the person, what their interests are, and how we can capitalize on those interests.” Furthermore, another RT student said, “It is important to consider the whole mind, body, and spirit and not just the diagnosis.” An SLP student stated that, “Part of our goals involve speech, cognition and communication, we also focus on how people interact socially with each other.” Students also discussed specific degree requirements, clinical experiences, and the differences in curriculum between SLP and RT programs. One area of discussion focused on counseling and supporting clients with characteristics like depression, anxiety, or other mental health issues. One of the RT students shared that, “People we are going to be working with may be pretty depressed due to a life altering thing that has happened to them and we take into consideration emotional well-being.” An SLP student mentioned a counseling class she had previously taken, “We take a counseling course to support clients who may be depressed, but if this starts to get to a place which is not in our scope of practice, we would refer to another professional.”

Based on comments from the post-focus group, it was evident that the students were considering the impact of therapeutic interventions beyond their specific disciplines. SLP students shared their thoughts about the broader purpose of RT intervention, “Recreation emphasizes the quality of life of the client and makes sure they can do tasks outside of the clinic.” Additionally, another SLP student shared, “RT is so beneficial in the clinical program setting and they ask, “What can the client do outside of the program?”, they realize the program is not forever and always ask that question.”

Lastly, students in both the pre- and post-focus groups discussed other disciplines, such as physical and occupational therapy. In the pre-focus group, students talked about their previous experiences observing OT’s and PT’s and also discussed their concerns and ideas to ensure an understanding of discipline specific roles and responsibilities. An SLP student expressed her concern about PT, “I am nervous once PT is involved, how am I going to have more than a conversation with my client while their holding her up and she is trying to stand?” A different SLP student mentioned, “It’s also important for the other therapies to understand what we are doing and implementing to help them throughout the entire clinical program.”

In the post-focus group, students talked directly about their first-hand experiences collaborating with students from other disciplines including PT and OT. An SLP student shared her experience

using a different approach with two different disciplines, “I know PT had ideas for functionality, but I couldn’t do anything that my PT did with my client, but I could do what I do with my RT by myself, it had better carryover.” Another SLP student shared a different perspective, “I felt like my goals were easy to incorporate into whatever the PT student was doing, if the client could not understand the steps of what he needed to do, I could jump in and break it down.”

Interprofessional Communication. A total of 39 thought units were associated with this theme. Students reported use of different tools, methods, and strategies to support interprofessional communication with each other during the 14-week clinical experience. They had consistent opportunities for in-person communication during and after co-treatment sessions and also used texting, phone calls, email, and a password protected online forum specific to each client in the program. The forum was accessed by all the students in the program and was different than the forum used to collect qualitative data specifically from the SLP and RT students.

Students in the pre-focus group discussed the importance of communication and what methods they used during previous work or clinical experiences. One of the RT students stated that, “I think communication should be a combination of digital and face to face.” A SLP student added that, “I think it’s also about keeping communication open between all of the disciplines and being up front with someone if you don’t understand what’s going on.” The students did not make any predictions about how they planned to communicate with the students on their team.

After the 14-week program, the students had more to say about interprofessional communication based on their experiences in working with other students to plan and implement intervention programs for their clients. A RT student shared, “My biggest takeaway from the semester is the importance of communication within a team.” Several of the RT and SLP students talked about the benefits of face-to-face communication vs. the use of digital communication such as texting or email. The students admitted that interacting in person or on the phone may take more time, but it helps with building a rapport with other students. One of the SLP students indicated that, “In the beginning of the experience it was more beneficial to have a lot of face-to-face communication to help build relationships.” Finally, students discussed the importance of having an online discussion thread to contribute written ideas about their clients, summarize sessions, and learn more about what other disciplines were doing in therapy. One RT student said that, “The client-specific discussion thread in my opinion was very helpful because it was interesting reading about what the other disciplines were covering in their treatment.”

Collaborative Teamwork. A total of 42 thought units were associated with this theme. In the pre-focus group, the students reported having never been part of a collaborative team in the context of interprofessional health care. However, they did discuss previous coursework they had taken in the area of team building and their experiences working in teams or group projects in the classroom. The students had limited clinical experiences working on teams supporting clients with disabilities. Despite this, students mentioned the importance of having the client be a member of the team. A SLP student stated that, “Keeping the client in the center will remind us to work together as a team with them.” One of the RT students shared, “If your attitude from the beginning is let's work together, let's learn together as a team to provide the best treatment, that's very encouraging as a team member.”

In the post-focus group, the SLP and RT students discussed their collaborative work with each other, but also with the PT and OT students. An SLP student indicated that, “Once I was observing a session and then the PT and OT started to bring me in because all of a sudden the client was having language troubles and they were like, we have the SLP here to help.” In addition, an SLP student talked about teaching specific strategies that may assist other students in the area of communication with their client, “My client had aphasia, and I taught some of my team members different concepts, like ‘perseveration,’ when you get stuck on a word and keep repeating it even though it has no context to what you are talking about.” In response to this, a RT student stated that, “I learned when to push and not to push with word finding because I observed you (SLP student) doing those things with the client.”

Both RT and SLP students discussed the concept of leadership on interprofessional teams. One RT student observed that, “People have different personalities, and some people take initiative while others do not, some are on the fence about when they are supposed to take initiative to act.” A SLP student stated that, “The PT student definitely took the leadership role for the PT/SLP co-treats.” Another SLP student mentioned that, “With RT, I feel like even if the activity was something different than I expected, it was easy for both of us to take a leadership role and both work our goals into the session.”

Values and Mutual Respect. Overall, this theme contained the fewest amount of thought units in both the pre- and post-focus groups. A total of 26 thought units were associated with this theme. Students engaged in less dialogue in this area; however, talked about maintaining a climate of mutual respect and shared values with the students on their clinical teams. One SLP student who had previously completed a clinical placement in a school setting shared, “When you are working with someone, the more you ask and the more open you are with them, the more you know and respect their field, it will be easier to work with that person.”

In the post-focus group, the students had more discussion in areas such as gaining respect and understanding the value of each student’s contribution to the team. Students stressed the importance of asking questions, educating others, and being open to understanding all discipline specific objectives. A RT student indicated that, “I think you have to be confident in yourself and if another student is not respecting you, it may be that they are not understanding your profession.” One SLP student shared an example from a midterm goal meeting where the team was discussing a client’s progress:

I reported that the client may not be understanding the task you are asking her to do and so I shared results from her language assessment and her problems with comprehension, but the students did not seem to accept this and I think they thought they were right. I asked how the students determined if she understood the directions and I tried to give details about her performance on the Western Aphasia Battery and where she had problems, but they didn’t take what I was saying which was really hard for me, because I didn’t know if they respected me.

This quote demonstrates that this student struggled with the issue of mutual respect and questioned if other students valued her input. For most of the students in the focus group, the CLS program was their first interprofessional clinical experience. These students found themselves in a position

of educating other students about their discipline and determining which specific strategies (e.g., phonemic cueing, use of visual cues) could be implemented by the entire team to support their clients.

Challenges to IPE/IPP. A total of 62 thought units were associated with this theme, and there was a large increase in this topic of discussion during the post-focus group. First, in the pre-focus group, students discussed perceived challenges related to implementing goals, planning sessions, and managing potential conflicts with other students. A SLP student talked about her approach, “I may say something to confront the problem, but I know myself and I will probably pick up the work and get it done myself and take a passive approach instead of addressing the issue with the other student.” Another SLP student shared a potential personal challenge, “I have never had to really take any other person’s goals into consideration, other than the client’s goals.”

Over 50 thought units were reviewed from the post-focus group in the area of barriers and challenges. Students talked about challenges related to communication, areas of treatment overlap (e.g., cognitive-communication skills, community reintegration), and integrating discipline specific strategies during treatment sessions. It was evident that upon completion of the CLS program all students reported barriers and challenges they experienced.

On the topic of interprofessional communication, the students discussed issues with email and in-person correspondence, one RT student shared, “No one responded to my emails which was very frustrating and it’s really hard scheduling times to meet in person.” Students also shared challenges related to overlap with some disciplines. Another RT student shared an example, “I told the client the definition for RT and then the OT repeated exactly what I said and basically everything we do and I thought, we can’t even explain the differences in our professions to the clients.” An SLP student talked about a challenge implementing discipline specific interventions during co-treatment sessions with PT, “I found the most difficulty making anything really functional and working on specific things that I would have wanted to work on with my client.”

Benefits and Impact of IPE/IPP. A total of 38 thought units were associated with this theme. During the pre-focus group, students discussed perceived benefits of IPE/IPP and the impact of the 14-week clinical experience on their approach to clinical work. The students talked mostly about the impact of IPP on their future careers; however, some students recognized the potential impact for their clients. One RT student stated that, “I think IPP is important because it shows that all the disciplines are invested in the client’s best interest.” An SLP student said, “I feel like the client will have a richer experience as we work to improve their quality of life.” When considering the impact of IPP on their future career, an SLP student shared, “I think we can only benefit and this will be a great opportunity to have as a student because when we are working, it will be happening in every setting that we work.” Finally, a RT student summarized her thoughts by stating, “When we do go out and have real jobs and look back on this experience, we will think about what happened and what worked and didn’t work and take this information into our future jobs.”

In the post-focus group, students’ comments focused primarily on the impact relative to the individual clients. Since the CLS program provided clients with opportunities for both individual and group clinical experiences, the students discussed the benefits they observed. A SLP student

noted that, “The program gave the clients a good opportunity to talk to a bunch of different communication partners.” Also, a SLP student stated that, “Structured and unstructured activities can happen in one session and you don’t get that when you are one-on-one with a client, many opportunities for interaction happened so naturally at CLS.” Finally, another SLP student shared, “My client made so many leaps and bounds this semester in her own personal feelings towards her disability, her acceptance, and her growth in each discipline.”

Online Discussion Forum. In the online forum, the eight students typed responses to question prompts and provided examples of how they were applying IPEC principles (McCarthy & DiGiovanni, 2017) during the clinical experience. The forum provided students with an opportunity to share specific examples during the clinical experience. SLP and RT students provided examples based on specific question prompts provided by the principal investigator. See supplemental materials for sample questions. The comments and examples provided by the students were organized and reviewed in three specific areas: (a) roles and challenges, (b) communication and teamwork, and (c) collaborative learning. The responses below are from the online forums and provide additional examples from the SLP and RT student perspective.

Roles and Challenges. One SLP student shared,

I worked with my client about what goals he has with each therapist. This was during a co-treat with RT so it gave them a chance to learn about my goals, as well as letting me know what goals they are working on with other therapists. What really helped me with learning about other professions was having the family conference. This made me reflect more on the other disciplines, and how I can incorporate their goals into mine.

An RT student wrote,

while working with the OTs in planning our first co-treatment at CLS, I was able to communicate to them some ways that the activity we chose aligned with our goals. While we were facilitating the activity, we realized there were more OT goals that were involved than we had initially considered. This makes me excited to see how activities can blend different discipline's goals together.

Communication and Teamwork. An RT student reported,

my SLP and I are in contact at least once a week. Our most common form of communication is through texting. Each week we discuss goals that we have for our client and plan an intervention that meets them. I think something we can improve on is incorporating our client in the planning process for next time at the end of each session.

An SLP student stated,

I work with RT to make sure that every activity is meaningful to the client. My RT does a great job of finding activities and I help adapt speech goals into the session. I believe this has been very successful. Our participants have stated that they enjoy the activities we have been doing.

Collaborative Learning. An SLP student shared,

through this experience I have learned how essential recreational therapy is to a client's rehabilitation and quality of life. RT works with their clients to get them back doing the activities they loved prior to the onset of their disability. They are a key part of rebuilding a client's quality of life and encouraging them to get back into society.

Finally, an RT student stated,

I enjoy working with my SLP student and she has taught me so many things about speech and language disorders. You can see the enthusiasm and the dedication she has to help our participants and it honestly makes me be more excited to work with her. I have acquired so much knowledge on how a healthy, working relationship should be.

Discussion

This research provided SLP and RT students an opportunity to share their lived experiences as they supported clients post-stroke as part of an interprofessional team. The students shared examples and perspectives within the framework of the IPEC core competencies (McCarthy & DiGiovanni, 2017) as they discussed their experiences before and after a 14-week clinical program. IPE/IPP has been identified as an important aspect of training pre-professional students in health and education (Brewer, et al., 2016; Brown et al., 2018; Lie et al., 2016). The American Speech-Language Hearing Association (ASHA) has identified IPE/IPP as an important area for learning and growth for both SLPs and audiologists and there has been an increase in the amount of continuing education opportunities, resources, and funding for IPE/IPP related research and clinical application.

The current study is important because it extends beyond previous research that has focused on interprofessional relationships between SLP students and students from other disciplines such as medicine, dietetics and nutrition, or adaptive physical education (Burns et al., 2012; Daugherty et al., 2020; Ludwig et al., 2019). In addition, previous SLP collaborations between occupational and physical therapy students (Furze et al., 2008; Neubauer et al., 2014) have informed IPE/IPP initiatives and best practices for institutions of higher education. Focusing on IPE/IPP for pre-professional students has value for not only the students and clients, but also for future employers and professionals in health services and education. If students have exposure to IPE/IPP in their undergraduate and graduate training, they may enter the workforce more prepared to engage in interprofessional opportunities with a better understanding of professional roles and how they can support the work of others to benefit their clients and caregivers.

In the present study, SLP and RT students shared their perspectives in focus groups and online forums before, during, and after completion of a 14-week clinical experience. Initially, the students expressed an interest in learning more about interprofessional collaboration and reported limited previous experience serving on collaborative teams with other health science students or professionals. They shared ideas about SLP and RT collaboration, but also focused on interactions and engagement with OT and PT students as well.

Students reported learning new skills as a result of the IPE/IPP experience. One example was related to supporting each other in collaborative practice while also gaining new knowledge and skills about specific strategies or approaches to improve client outcomes. Students discussed using different methods for communication within their teams and determined what was most effective for planning sessions and providing discipline specific information and training. They agreed that multiple modalities are useful for planning (e.g., text, email, phone) and that live meetings (e.g., online or in person) are still valuable despite challenges in time and scheduling. Furthermore,

students expressed that they learned about the importance of shared interprofessional goals and how they can better integrate their discipline specific goals with goals from other disciplines.

This study provided the students with an opportunity to be on collaborative teams alongside their peers, clinical supervisors, clients, and caregivers. Students talked about working in teams and some of the challenges they encountered which can halt progress and reduce the overall quality of service and care. In addition, the students discussed the importance of modifying their approach after trying different methods to achieve better communication or more efficient planning with their team. Although some students reported ‘giving up’ on collaboration, others remained resilient in continuing to work together in the best interest of their client. One of the SLP students shared an example of this when she attempted to repeatedly educate a PT student on her team about the client’s specific type of aphasia and some strategies to assist in communication. The SLP student said that it was most effective when she modeled and explained specific cueing and response strategies that benefitted the client. These examples support the idea of infusing IPE/IPP into health science curriculums as it allows for better carryover of goals and opportunities for meaningful peer-to-peer teaching and learning.

An unexpected finding from this study was how the concept of leadership emerged from the focus group discussions. The SLP and RT students discussed the importance of leadership skills and how these skills can impact the work of an interprofessional team. Students reported that they respected when an individual took the initiative to educate others about their discipline and took a more significant leadership role on the team. It is important to discuss the topic of leadership in the context of the IPEC core competencies (McCarthy & DiGiovanni, 2017) as this may influence mutual respect, communication, and the roles and responsibilities of each student working on the team. During IPE/IPP experiences, students should have the opportunity to assume various leadership roles such as organizing co-treatment sessions, facilitating student team meetings, and/or implementing workshops and trainings for students from other disciplines.

Along with the personal and professional lessons learned in the context of interprofessional teams, students also focused on how this approach may benefit clients and caregivers. Students identified three general areas to consider with each client: (a) social, (b) holistic, and (c) personal. Since the IPE/IPP program involved many opportunities for interactions and conversation in small groups, the social benefits were evident for both clients and students. Based on clinical observation, these types of interactions were beneficial for clients relative to improving their mood and/or supporting enjoyment and fun. Next, the students discussed the value of treating the whole person and understanding the importance of having a unified plan for intervention, while working in the framework of functional global goals. Finally, students talked about recognizing the personal interests and background experiences of their clients and how these can be motivating factors as they work to achieve their treatment goals in the context of an interprofessional program.

Recommendations. Recommendations presented in this section are based upon the RT and SLP student perspectives gathered from the post-focus group in addition to general conclusions based on the academic and clinical experiences learned from the CLS program.

Based on data from the post-focus group, students supported the idea that IPE/IPP should be embedded into health science programs with a focus on the IPEC core competencies (McCarthy

& DiGiovanni, 2017) meshed with experiential clinical opportunities. The students also recommended that a range of options for supporting interprofessional communication be considered as student teams determine which method is most effective and sustainable throughout the semester. Also, students recommended more efficient channels for sharing written progress notes and engaging in planning sessions. It is possible that a platform like Microsoft Teams, which is available to all students and faculty at the Institution, may be a good option for simulating digital medical records. The Teams platform could provide a secure infrastructure for the purpose of writing and sharing notes and updates among the different student teams. Finally, the students recommended increased face-to-face meeting time for the purpose of planning interprofessional therapy sessions, especially during the initial weeks of the clinical experience.

This research supports the implementation of systematic and structured IPE/IPP experiences for pre-professional students in both SLP and RT, but also other disciplines such as OT and PT. The authors present three general recommendations for faculty and clinical supervisors who support experiential IPE/IPP learning opportunities for pre-professional students in health sciences: (a) pre-program workshops and discipline specific education, (b) small team approach with shared global goals focused on participant interests, and (c) accessible oral and written communication methods with diverse options for correspondence, collaboration, and sharing.

Based on the authors' previous experience in supervising students in IPE/IPP settings, it is important to meet with students in an interprofessional manner prior to the program to share discipline-specific information and key areas of overlap. Also, having students work in small intervention teams provides them with an opportunity to establish global goals (e.g., improve functional communication, improve social/pragmatic skills) and ensure a shared focus to improve participant outcomes. Faculty should support students in determining effective and structured methods for communication, with a specific focus on planning sessions, documentation, and sharing information relative to discipline-specific strategies and supports. A specific example of this is when student teams engage in family conferences and have an opportunity to learn how their discipline fits into the broader team dynamic, including the efforts and challenges faced by caregivers.

Limitations and Future Directions. Even though the nature of qualitative inquiry supports research with fewer participants, one limitation of this study was the small number of students involved in sharing their experiences. The perspectives gathered from this specific group of students represents a collection of ideas and experiences based on a small learning community of clinical supervisors and students from SLP, RT, OT, and PT at a private institution of higher education. The results of this study may not be applicable or generalizable to students learning in larger scale IPE/IPP settings or with professionals from other related fields such as medicine, nursing, or social work. Also, since few academic programs in higher education have both speech-language pathology and recreational therapy, there are limited opportunities for students in these disciplines to work together and realize the benefits of this type of collaboration.

In terms of future directions, the research team would like to gather more information from OT and PT students and understand their roles and perspectives relative to the IPEC core competencies (McCarthy & DiGiovanni, 2017) and their work with SLP students. Also, future research should focus on objectively tracking students' changes in learning over the course of a semester while

also more formally assessing client outcomes relative to the comprehensive implementation of IPE/IPP. More formal tracking and reporting of client outcomes would provide the students with a better idea of the impact of their service and what clients gain from the experience. This information would be beneficial for planning group and individualized sessions to be more customized to clients' needs based on their motivation, interests, and background experiences. Also, it would be beneficial to explore how alumni working in health and educational settings approach interprofessional care and manage IPP challenges across clinical populations.

Conclusion. Based on the results from this study, it is evident that SLP and RT students learned new skills and gained knowledge about working on collaborative teams. The students learned how to educate others about their discipline and highlight best intervention practices to positively impact client progress in areas such as communication and quality of life. Based on student comments, IPE/IPP was deemed an important component of the students' clinical experience as they shared their perspectives using the framework of the IPEC core competencies (McCarthy & DiGiovanni, 2017) while also reflecting on topics such as leadership and shared global goals. The students expressed that IPE/IPP can improve quality of care for clients while ensuring they are treated as a whole person. SLP programs that integrate IPE/IPP into their clinic and curriculum provide students with an opportunity to grow in a protected space as a member of a dynamic team. Since ASHA is a member organization of IPEC, they support the notion that SLP and audiology students should be exposed to IPE/IPP experiences in pre-professional training. The current research provides the student perspective about the value of IPE/IPP experiences and supports learning and skill acquisition that can occur when students engage and collaborate across experiential settings.

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Supplemental Material

Focus Group Topics/Sample Question Prompts

Section 1: (Pre-Focus Group only: Get to Know the Other Discipline)

Tell us about your discipline. Briefly describe how you conduct assessments and intervention for your client(s)/participants. Where do you see overlap in scope of practice?

Section 2: (Pre- & Post-Focus Groups: IPEC Competencies)

A. Roles & Responsibilities:

Pre-Focus Group:

- Do you have any previous experience collaborating with others?
- What do you perceive your role at CLS?
- Please predict any challenges.

Post-Focus Group:

- Do you think your participant made progress?
- Do you think your participant gained something from the CLS?
- Share what you learned about the impact of your discipline.

B. Values/Mutual Respect:

Pre-Focus Group:

- How do you promote mutual respect?
- How can you build a relationship with participants, families or others?
- How will you show the value of your profession?

Post-Focus Group:

- Do you think you achieved a level of mutual respect?
- Identify how those strengths were used? not used?
- Any ethical dilemmas during the experience?

C. Interprofessional Communication:

Pre-Focus Group:

- Importance of consistent communication.
- Planning: Do you have a plan for interprofessional communication?
- How do you plan to support the work of other disciplines?

Post-Focus Group:

- What worked? What did not work? Share how you planned sessions.

D. Collaborative Teams:

Pre-Focus Group:

- What have been some of your most successful team experiences?
- How about previous challenging team experiences?
- Why make the extra effort to collaborate with other professionals?

Post-Focus Group:

- Would you seek out a collaboration with the other discipline?
- What do you see as the most valuable outcome of collaboration?

Section 3: (Post-Focus group only: IPE/IPP Impact on Outcomes)

- What do you think the participants will gain? Did IPP improve outcomes?
- What do you think caregivers gain from IPP? How about pre-professional students?

Supplemental Material

Sample Questions for the Online Discussion Forum

Online Forum	Sample Questions
Forum 1/Q1	During your time at CLS have you faced a challenge with another discipline? If so, what was challenging about it and what did you do to handle the situation?
Forum 1/Q2	How did you ensure that the other students understood what you were doing during your co-treatment sessions?
Forum 2/Q1	Provide an example of what you are doing to ensure consistent and effective communication that will ultimately benefit your client?
Forum 2/Q2	How did you work with RT or SLP students to put the clients' needs first? What have students done?
Forum 3/Q1	What is something you have learned from a student in another discipline and how would you incorporate this into your future work as a therapist?
Forum 3/Q2	Describe a time when you shared your knowledge and opinions with your RT/SLP team member.

Supplemental Material

Operational Definitions: Primary Themes

Roles and responsibilities

- Specific mention of a therapy approach (i.e., person-centered planning)
- Mention of scope of practice in a discipline
- Taking an idea/approach from a different discipline to use during their individual session
- Prior experience in a specific setting in a discipline

Interprofessional Communication

- Mention of strategies or methods to support communication among disciplines
- How student information is shared among disciplines
- Forms and types of communication (e.g., Sakai Forum, email, texting, face to face)

Values and Mutual Respect:

- Making a compliment towards another student or discipline
- Being open to learning about other professions
- Mentioning respect for others

Teams and Teamwork

- Working together, mentioning a team approach
- Overlapping goals (worked on together in co-treat sessions)
- The act of learning from each other or teaching another student

Challenges/barriers:

- Barriers to IPE or IPP (not barriers for individuals)
- Things that are difficult or may be problem
- Difference in opinions among student in different disciplines
- Something that does not seem to be effective or working

Benefits and Impact of IPP:

- Benefits and impact that interprofessional practice has had on the students and the participants

Supplemental Material

Number of Thought Units by Theme and Subtheme

Focus Group	Primary Themes						Total	
	Roles and Responsibilities	Communication	Collaborative Teams	Values/Mutual Respect	Barriers	Benefits/Impact		
PRE	SLP focus	23	14	16	12	10	16	197
	RT focus	50						
	Overlap	34						
	Other	22						
POST	SLP focus	9	25	26	14	52	22	181
	RT focus	4						
	Overlap	9						
	Other	20						
Total	171	39	42	26	62	38	378	

Note. Four subthemes exist under Roles and Responsibilities. ‘SLP focus’ = thought units about specific SLP approaches, strategies or terminology; ‘RT focus’ = thought units about RT approaches, strategies, and terminology; ‘Overlap’ = thought units about both RT and SLP collaboration; ‘Other’ = thought units that mention either PT and/or OT.