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Speech-Language Pathology and Psychology Students' Perceptions of an Interprofessional Autism Intervention: An Exploratory Case Study

Haley Marie Nelson

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SPEECH-LANGUAGE PATHOLOGY AND PSYCHOLOGY STUDENTS’ PERCEPTIONS
OF AN INTERPROFESSIONAL AUTISM INTERVENTION: AN EXPLORATORY CASE
STUDY

By

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Bachelor of Arts, Western Washington University, Bellingham, WA, 2013
Bachelor of Science, Portland State University, Portland, OR, 2016

Master’s Thesis

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Abstract

The purpose of this qualitative case study was to understand how the interprofessional collaboration (IPC) experience of Youth Engagement Through Intervention (YETI) changes perceptions and knowledge regarding scope of practice of pre-service professionals in the Communicative Sciences and Disorders (CSD), School Psychology, and Clinical Psychology programs. Semi-structured interviews were conducted with pre-service professionals participating in YETI as student clinicians at three different time periods. The results contribute to the existing literature base affirming that interprofessional experiences during pre-professional programs are beneficial. For the Departments of Communicative Sciences and Disorders and Department of Psychology at University of Montana, findings have the potential to inform decisions about developing and maintaining interprofessional education and interprofessional collaboration programs in the future.

*Keywords:* interprofessional education, interprofessional collaboration, participant-observer, exploratory case study
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Introduction

Interprofessional Education (IPE) occurs when professionals are learning about, from, and with one another for effective collaboration and delivery of the highest quality of care (World Health Organization, 2010). The overarching goal of IPE is to promote interprofessional collaboration and client-centered practice. The American Speech-Language-Hearing Association (ASHA) has stated that IPE learning should lead to better understanding of the roles and responsibilities that each profession brings to different settings, so that team members value other’s knowledge and abilities and are able to promptly identify who on the team can best serve the needs of the client. For example, high performing schools have been shown to successfully create a common focus and clear communication between educators, administration, and families with a commitment to the goals that support student learning and improved performance (Johnson, 2016). These schools provide supportive, personalized, and relevant student learning that is both rigorous and meaningful. Students’ individual needs are supported by an interprofessional team of teachers, speech-language pathologists (SLPs), special educators, psychologists, and parents. Monitoring, accountability, and assessment are strengthened by interprofessional knowledge, and curriculum and instruction are adapted based on students’ learning styles. This example illustrates the desired outcome of interprofessional collaboration being implemented in an educational setting because professionals are collaborating to meet the needs of the students.

Outcomes associated with IPE in university settings have been identified as learners’ reaction, changes in attitude or perception, changes in knowledge or skill, behavioral changes, changes in delivery of care, and benefit to client (Lapkin, Levett-Jones, & Gilligan, 2011). Each of these outcomes contribute to the success of an effective interprofessional team and can be
applied to interprofessional collaboration in educational settings. Several of the IPE outcomes in a university setting, as laid out by Lapkin et al. (2011) will be used to organize the literature review section of this paper.

Although interprofessional education (IPE) and interprofessional collaboration (IPC) are frequently used interchangeably in the extant literature, IPC will be the primary focus in this paper because the pre-service professionals in this study do not take part in a formal IPE curriculum prior to participation in the intensive social skills intervention. The term pre-service professionals will be used to describe undergraduate, master’s seeking, and doctoral student clinicians in the Communicative Sciences and Disorders (CSD) or Psychology Departments.

<table>
<thead>
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<th>Table 1</th>
<th>Interprofessional Terminology Definitions</th>
</tr>
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<tr>
<td>Interprofessional Education</td>
<td>Interprofessional education occurs when two or more professions learn with, from and about each other to improve collaboration and the quality of care (WHO, 2010).</td>
</tr>
<tr>
<td>Interprofessional Collaboration</td>
<td>In the clinical setting, interprofessional collaboration occurs when healthcare providers, patients, and their families work together in the provision of coordinated and integrated care to enable optimal health outcomes (WHO, 2010).</td>
</tr>
<tr>
<td>Interprofessional Team</td>
<td>An interprofessional team comprises different professions with specialized knowledge, skills and abilities; each contributing to a common goal which cannot be achieved when one individual profession acts alone (WHO, 2010).</td>
</tr>
<tr>
<td>Interprofessional Practice</td>
<td>Two or more professionals’ collaborating, without perceived hierarchy and with a complete understanding of the other’s roles and responsibilities, to improve client outcomes and quality of care (Johnson, 2016).</td>
</tr>
<tr>
<td>Interprofessionalism</td>
<td>When team members are simultaneously considering the client’s concerns, considering best alternatives, and negotiating an approach that recognizes and respects the role that each professional brings to the concerns raised and solutions provided (Johnson, 2016).</td>
</tr>
</tbody>
</table>
Literature Review

Introduction. Interprofessional education (IPE) has been defined as occurring “when students from two or more professions learn about, from and with each other to enable effective collaboration, health outcomes and quality of care” (WHO, 2010). According to the American Speech-Language-Hearing Association (ASHA), the most crucial component in that definition is individuals involves “learning about, from and with others, typically in pre-professional programs,” so that when they enter the workforce they have knowledge of the skills, strengths, and expertise the other person brings to the interdisciplinary team (Johnson, 2016). Further, interprofessionalism needs to go beyond students taking classes from other disciplines and sharing the same type of learning experiences to working on teams that are simultaneously exploring the best options for client care, while negotiating an approach that addresses the concerns of each professional on the team (Johnson, 2016).

Interprofessional collaborative practice has been defined as a professional process incorporating communication and decision-making, joining interdisciplinary knowledge and skills (Way, Jones, & Busing, 2000; World Health Organization, 2010). Interprofessional education and interprofessional collaboration are similar concepts in that licensed professionals or pre-service professionals are working as part of an interdisciplinary team to improve client care. IPE and IPC differ in that IPE has an explicit curriculum component, while IPC does not. The Interprofessional Education Collaborative (IPEC, 2011, 2016) established four competencies for interprofessional collaborative practice: (1) values/ethics (i.e. working with other professionals while maintaining a mutual respect and shared values); (2) roles and responsibilities (i.e. addressing the needs of the client using knowledge of one’s own role and the role of other professionals on the team); (3) interprofessional communication (i.e.
communicating with other professionals and families in a manner which supports a team approach); (4) teams and teamwork (i.e. building professional relationships to effectively work as a team). These competencies were designed to guide interprofessional practice and the development of IPE curriculum at the university level. Increased communication within and between disciplines is essential and encouraged.

The learning that occurs in IPE programs leads to an improved understanding of the knowledge, skills, and strengths each profession brings to different settings (e.g. medical or educational). The ASHA Code of Ethics (2016, p. 7) stipulates that speech-language pathologists must: “…maintain collaborative and harmonious interprofessional and intraprofessional relationships,” thus designating collaboration between disciplines as best practice and essential to delivering the highest quality of care. Henceforth, acquiring the knowledge and skills related to working effectively on an interdisciplinary team has a positive impact on the quality of care the client receives.

Despite the growing body of literature supporting IPE as best practice (ASHA Code of Ethics, 2016; IPEC 2016; Parsell & Bligh, 1998), there is debate among disciplines regarding the effectiveness of IPE and the best approach to use with student learning and in health professional fields (Braithwaite et al., 2007; Zwarenstein, Reeves, & Perrier, 2005). Additionally, at the university level, most training programs for health professionals are separate with limited to no interprofessional contact between programs (Shoffner & Wachter Morris, 2010). Interprofessional education research specific to Communicative Sciences and Disorders and Psychology in a university or educational setting is nonexistent; as a result, the themes discussed in this literature review were established from IPE and IPC between other disciplines, specifically other health and education professions. The following outcomes to IPE have been
identified and will be expanded upon: lack of IPE curriculum in student learning, the desired result of IPE in graduate school curriculum, knowledge gained through IPE experiences, and how attitudes change following IPE experiences.

**Current IPE.** The majority of graduate students in health professions are not receiving adequate IPE as part of their program and clinical training, despite literature supporting IPE as best practice for improving client care (Parsell & Bligh, 1998; ASHA Code of Ethics, 2016). The World Health Organization commissioned a study to explore IPE on a global level and reported that internationally IPE is not systematically and universally integrated into curricula (Rodgers & Hoffman, 2010; World Health Organization, 2010). Lapkin et al. (2011) completed a systematic review investigating effectiveness of university-based IPE and common barriers associated with implementation. The study concluded that university programs frequently operate on differing schedules making IPE challenging to implement due to the absence of a universal schedule. Other noted logistical challenges to IPE in university settings include course design, timetable restrictions (i.e. bringing students from varied disciplines together at the same time and place), resource implication, and large student cohorts. Additional barriers involved faculty support, attitudes toward IPE, and financial constraints (Urbina, Hess, Andrews, Hammond, & Hansbarger, 1997). It should be noted, however, that the paucity of evidence for IPE implementation is less likely due to its ineffectiveness and more likely due to the difficulty in evaluating its effectiveness rigorously (Zwarenstein & Reeves, 2006).

**Successful IPE.** The goal of the IPE approach in the graduate curriculum is to prepare students for working on interprofessional teams in the workplace. IPE is most effective when it is taught simultaneously throughout clinical training and as skill acquisition is advanced (Lapkin et al., 2011; Young, Baker, Waller, Hodgson & Moor, 2007). Way et al. (2000) identified the
following seven elements of effective collaboration in a professional setting: mutual trust and respect, autonomy, responsibility, communication, coordination, assertiveness, and cooperation. If IPE is to be effective in teaching students about collaboration, those seven elements should be understood and practiced in clinical training placements. IPE offers an opportunity for students to explore and practice concepts that will influence collaboration throughout their professional career (Casto, 1987).

One common theme identified as leading to success in IPE models is helping the students understand their own professional identity while gaining and understanding of the other professionals’ roles on the team (Bridges, Davidson, Odegard, Maki & Tomkowiak, 2011; Lister, 1982). In their study, Bridges et al. (2011) examined three university training curriculum models which combine a didactic program, community-based experience, and an interprofessional simulation experience. They noted that while pre-service students might not initially understand the complexities of the relationships between health professions, this develops over time, as does understanding boundaries and the pre-service professional’s own duties and role on the team.

Mellor, Cottrell, and Moran (2013) identified additional themes from an IPE study investigating experiences of undergraduate students from medicine, physiotherapy, occupational therapy, pharmacy, and nursing. Themes identified were appreciation for the learning environment and participation of their fellow students, effective communication skills, and the teamwork approach accompanying the IPE activities, and finally increased knowledge of roles and responsibilities associated with the other’s profession (Mellor et al., 2013).

As stated above, the desired outcome of IPE in a university setting is to prepare pre-service professionals for roles on an interdisciplinary or interprofessional team. This is
accomplished through university programs that allow students to explore their own professional identity, while simultaneously learning about other professions.

**Knowledge of scope of practice.** Expanding knowledge of scope of practice is critical to fulfilling the IPEC core competency of “use the knowledge of one’s own role and those of other professions to appropriately assess and address the health care needs of patients” (IPEC, 2016). This competency focuses on an individual’s ability to (1) understand and explain to others, their role as a member of a profession, and (2) understand role and responsibilities of other professionals with whom they may be collaborating. Several studies have shown that pre-service professionals have limited knowledge of other professionals’ scope of practice and skills essential for collaboration (Dobbs-Oates & Wachter Morris, 2016; Suleman et al., 2014; Wilson, McNeil, & Gillon, 2015).

Cooke, Boggis, and Wakefield (2003) explored this dynamic through an interprofessional education experience between nurses and medical students. Students reported not knowing the other discipline’s scope of practice and lack of clarity in roles and responsibilities was problematic. IPE experiences increase awareness of the training the other profession was receiving, enhanced understanding of the other’s profession, changed stereotyped views, and increased knowledge of collaborative practices (Cook et al., 2003; Dobbs-Oates & Wachter Morris, 2016; Lidskog, 2008; Suleman et al., 2014).

Another benefit of IPE at the university level is exposure to a different perspective, which can lead to increased knowledge of the other professionals’ roles and responsibilities. Tourse, Mooney, Kline, and Davoren (2005) explored an interprofessional collaboration experience between social work and education interns in a classroom-based setting. Results of this two-year project indicated tangible benefits for both pre-service professionals. Benefits included an
enlarged sphere of understanding for both disciplines, gaining an understanding of how to view client’s risk factors and needs through a different lens, and pre-service professionals practicing “blending treatment paradigms into interventions that can be more powerful” (Tourse et al., 2005). Pre-service professionals exploring treatment options from an interdisciplinary approach allows individuals to see another perspective, thus expands knowledge of the other professional’s role and responsibilities.

**Shifting Perceptions.** The World Health Organization (1988; 2010) highlighted the importance of developing and maintaining good interprofessional working relationships. One argument for IPE in university health professions is reducing negative stereotyping. Stereotypes have been defined as beliefs about the characteristics, attributes and behaviors of another’s professions (Hilton & von Hippel, 1996). Sitting in a classroom together and experiencing the material is not sufficient and has the potential to reinforce stereotypes (Barr, 2002). For a shift in perceptions of another’s discipline to occur, there needs to be the opportunity to challenge existing stereotypes. The application of IPE in a university setting is an example of a chance to alter pre-existing stereotypes and potentially prevent negative stereotypes from developing.

In general, students trained in an IPE approach show greater respect and positive attitudes toward each other and work toward improving client care (Barr et al., 2002; Karim & Ross, 2008). Jacobsen and Lindqvist (2009) investigated an IPE experience between nursing, occupational therapy, physiotherapy, and medical students during a two-week clinical experience. Results showed a significant change in students’ attitudes toward the other professions and indicated that development of these attitudes could lead to effective interprofessional practice (Jacobsen & Lindqvist, 2009). Lin et al. (2013) piloted a problem-based learning (PBL) approach to IPE between nursing and medical students, where students
completed one lecture, one PBL case study, and one session of group discussion and feedback. Results indicate the IPE experiences had a positive impact on their attitude and confidence toward interprofessional collaboration in solving clinical ethics problems (Lin et al., 2013).

Lastly, reflection of learning has been identified as another important component of increasing understanding of other professionals’ roles and collaborative practices (Dobbs-Oates & Wachter Morris, 2016). The study examines the outcomes of an IPE program between special education teachers and school counselors through students’ reflections. Reflective practices are described as common among teacher education programs, as they allow for the student to evaluate the experience, solidify learning, and develop a plan for future action. Dobbs-Oates & Wachter Morris (2016) noted that increased respect for the other professional and the collaborative relationship was a major theme of the study.

**Conclusions.** Wellmon, Gilin, Knauss, and Linn (2012) noted that the skills required to work on an interdisciplinary team are not intuitive and cannot be learned exclusively on the job. Collaborative techniques must be developed, taught, and practiced to be integrated into the pre-service professional’s competency base (Dobbs-Oates & Wachtner Morris, 2016; Margison & Shore, 2009). Currently, professional programs are not placing great emphasis on incorporating interprofessional education into their curriculum and are instead keeping content specific to their scope of practice (Lumague et al., 2006). The aim of this literature review was to demonstrate the significant benefit to interprofessional education (IPE) and interprofessional collaboration (IPC) in the university setting prior to beginning a professional career. IPE has the potential to positively impact perceptions of different disciplines, as well as provide a knowledge base for the role and responsibilities of other professionals on an interdisciplinary team. Subsequently, IPE has been shown to strengthen the ability of each member of the team to carry out their
individual roles more effectively. Currently, there is not an existing body of literature regarding interprofessional education between speech-language pathologists and school psychologists. In fact, literature supporting IPE in educational settings is minimal. Speech-language pathologists and school psychologists work in schools where they are expected to work interprofessionally on individualized education program (IEP) teams for children with special education needs. Nonetheless, organizations such as the Centre for the Advancement of Interprofessional Education (CAIPE) in the United Kingdom, the World Health Organization (WHO) and the American Speech-Language-Hearing Association (ASHA) are currently working to establish guidelines for interprofessional education and collaboration that include school-based settings.

**Current Study**

**Interprofessional collaboration at the University of Montana.** The Communicative Sciences and Disorders (CSD), Clinical Psychology, and School Psychology Departments at the University of Montana are committed to preparing pre-service professionals for their roles as effective members on an interdisciplinary team through interprofessional collaboration. Youth Engagement Through Intervention (YETI) is a weeklong intensive social skills intervention program for children ages six to thirteen years with Autism Spectrum Disorder and related disorders. Pre-service professionals from the CSD and Psychology departments deliver direct intervention in skill areas related to engagement, interaction, and communication. Pre-service professionals provide individualized, one-to-one specialized instruction for the client. During YETI, a variety of evidence-based intervention practices and strategies are utilized, including video modeling, social narratives, differential reinforcement, role-playing, and visual schedules. Additionally, YETI assists children in working toward social communication goals such as joining in peer groups, maintaining conversations, and coping with frustrations.
YETI is the conceptual framework in which IPC will be investigated. Because YETI does not include an interprofessional education curriculum, it is considered an IPC experience. Pre-service professionals learn from and with one another, but do not learn explicitly about the other discipline during program training.

**Research question.** The purpose of this study was to explore the question: How does participation in an interprofessional intensive social skills intervention for children with ASD and related disorders change attitudes and knowledge regarding scope of practice of pre-service SLP and Psychology students?

**Methods**

An exploratory case study approach (Yin, 2003) was used to investigate the impact the interprofessional collaboration (IPC) experience of YETI on knowledge of roles and responsibilities of pre-service professionals. Further, potential changes in perceptions across three time periods and possible perceived benefits and barriers of the IPE experience were explored. Semi-structured interviews and manual coding were used to develop themes related to IPC experiences in pre-service professionals in a university setting. The study was approved by the Institutional Review Board (IRB) at the University of Montana prior to data collection.

**Researcher and Research Biases**

**Primary investigator.** Currently, I am a second year Speech-Language Pathology (SLP) Master’s degree-seeking student in the Communicative Sciences and Disorder (CSD) graduate program at the University of Montana (UM). I completed my thesis research throughout YETI and had the role of participant researcher, co-director, and peer. This means I collected data, was a member of the leadership team during the first week of YETI, and engaged as a graduate.
student clinician peer during the second week of YETI. During the second week of YETI, only speech-language pathology pre-service professionals were present.

Further, during my first year of graduate school, I was a research assistant in the Culturally Responsive Evidence-Based Practices in School Psychology (CRESP) research lab at UM, where I worked with pre-service school and clinical psychologists. These research and clinical experiences have shaped my perceptions and biases associated with my knowledge of the field of psychology and speech-language pathology. This knowledge may have biased the development of interview questions and analysis of the data; however, measures were taken to safeguard my biases and to make the research process as transparent as possible.

Role as a participant-observer. Engaging in research as a participant-observer afforded the opportunity to attain the position of a “trusted person” in the eyes of the participants (Glesne, 2006). Acting as a member of the leadership team during the first week of YETI accorded me a level of trust and respect not necessarily granted to an interviewer who is a complete stranger. Glesne (2006) discussed a participant-observation continuum, ranging from observation only to full participation. As a full participant, I was an active member of the community of participants taking part in the research. The benefit of being a participant observer is I observed first-hand how the participants’ actions during YETI corresponded to their statements during time two and time three interviews. I had context for the examples provided and clients discussed because I had either personally witnessed these events or been involved in the reflection meeting at the end of the day. I noted patterns in the participants’ behaviors and cross-checked these patterns across interviews, field notes, and member checks. Through the YETI experience, engaging both as a leader and as a peer, I obtained trust, developed relationships, and felt an obligation to accurately
represent the words of the participants, due to my role as a participant observer and as an ethical researcher.

Participants

Pre-service professionals were purposefully selected by the Communicative Sciences and Disorders (CSD) and Psychology faculty supervisors for the summer intensive YETI programs at the University of Montana. Participants were recruited from the chosen group of pre-service professionals. Participants were over the age of 18 and taking part in YETI in a direct service role, meaning they provided either speech-language intervention or behavioral support. Participants were provided with a consent to participate form and were given the option to discontinue the process at any time. Participants were given the option to have their identity kept anonymous. If the participant chose to have their identity kept confidential, the researcher assigned a pseudonym.

Ten pre-service professionals consented to be interviewed for the current study. Participants were one undergraduate and six graduate SLP students, two School Psychology doctoral students and one Clinical Psychology doctoral student. Demographic characteristics of the participants are summarized in the Table 2. Demographic characteristics and data on previous interprofessional experiences were collected via an online survey completed by all participants prior to their first interview.
Table 2

Participant demographics

<table>
<thead>
<tr>
<th>Name</th>
<th>Program</th>
<th>Degree</th>
<th>Standing</th>
<th>Prior IPC experience</th>
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<tr>
<td>Kiley</td>
<td>SLP</td>
<td>Master’s</td>
<td>Second</td>
<td>Yes</td>
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<tr>
<td>Rob</td>
<td>SLP</td>
<td>Bachelor’s</td>
<td>Senior</td>
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<td>Kathleen</td>
<td>SLP</td>
<td>Master’s</td>
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<td>No</td>
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<td>Brooke</td>
<td>SLP</td>
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<td>Angela</td>
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<td>Sofia</td>
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<td>Sharon</td>
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<tr>
<td>Charlotte</td>
<td>School Psychology</td>
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<td>Ellie</td>
<td>School Psychology</td>
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<tr>
<td>Ruth</td>
<td>Clinical Psychology</td>
<td>Doctoral</td>
<td>Third</td>
<td>Yes</td>
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Setting

Pre-intervention (Time 1) interviews occurred prior to the YETI summer intensive program. Post-intervention (Time 2) interviews were conducted immediately following YETI. The two-month follow-up (Time 3) interviews were occurred two to three months following YETI depending on participant availability. All interviews were conducted either in-person at the University of Montana or through video web-conference.

Measure

This qualitative exploratory case study used a series of semi-structured interviews to investigate the research question. Interviews were completed to obtain detailed descriptions of the student clinician experience of YETI and how knowledge of scope of practice and perceptions toward other disciplines changed. Open-ended interview questions were developed related to the research question. The Time 1 interviews focused on interviewees’ a) current knowledge of the other professionals’ scope of practice and b) attitudes toward the other profession in regard to their role on an interprofessional team. The Time 2 and Time 3 interviews
focused on if and how knowledge and perceptions have changed and reflection on the interprofessional collaboration experience.

**Data Collection Procedure**

**Recruiting participants.** Recruitment of participants began in May of 2018. All pre-service professionals assigned to YETI as their summer clinical experience were sent an email request explaining the study and requesting their participation. If no response was obtained within one week, an additional email was sent. Participation was voluntary and no compensation was offered for participation. A log of participants was kept in a web-based storage location compliant with the Family Educational Rights and Privacy Act (FERPA).

**Informed Consent.** Following an explanation of the nature of the study, participants were asked to sign a consent form that delineated the inclusion criteria, purpose of the study, data collection procedure, risks and benefits of participating, the confidentiality plan, and procedure for withdrawing from the study (see Appendix A). Interviews were not conducted without signed consent from each participant.

**Research Design**

The first author is a classmate of the research participants and was a participant observer throughout the data collection process. This expanded on the work conducted by Rosenfield, Oandasan, and Reeves (2011) by contributing an additional student perspective to the IPE literature. There has been a demand for more student involvement in the design, implementation, and evaluation of IPE activities in a university setting because student involvement has been shown to increase student collaboration as well as promote the longer-term sustainability of IPE programs (Hoffman, Rosenfield, Gilbert, & Oandasan, 2008).
An exploratory case study approach (Yin, 2003) was used as a method of describing if, how, and why the interprofessional collaboration (IPC) experience of YETI alters knowledge and perceptions regarding interprofessional roles and relationships. The two factors that must be true for the case study approach to be relevant were true for the current study; there was be no control over behavioral events, and the study focused on contemporary events (Yin, 2003). Additionally, a case study was the most practical choice because it explores a contemporary phenomenon within a real-life context (Yin, 2003). The phenomenon was the interprofessional collaborative experience between SLP and Psychology pre-service professionals and the real-life context was having the IPC experience within an intensive ASD social skills day camp. The case study approach was the best fit because the contextual conditions of YETI were directly linked to the phenomenon being explored, IPC, in a university setting.

The timeline for interviews of the participants was the same; however, the clinical requirements for pre-service Speech-Language Pathology (pre-SLP) and pre-service Psychology (pre-Psyc) students during the YETI program were different. The week before the YETI program, Pre-SLPs and Pre-Psycs participated in a six-hour training. Following the training, pre-service professionals had a general understanding of the schedule of the YETI program, as well as “common” roles and responsibilities of each member on the team specific to the YETI program. Additionally, pre-SLPs were required to complete a 3-week intensive, didactic autism course, as well as prepare for the two weeks of clinical responsibilities following the YETI program. The clinical responsibilities for pre-SLPs included one week of a diagnostic clinic, where pre-SLPs work in pairs to complete a case history, administer a language assessment, and observe the administration of the Autism Diagnostic Observation Schedule (ADOS) as part of an autism diagnostic evaluation. Additionally, pre-SLPs participated in a second week of the YETI
program with SLP pre-service professionals only. Lastly, it is pertinent to note that pre-SLPs received a letter grade for completion of the YETI program, while pre-Psycs did not. These details are relevant because they speak to the difference in requirements between the two programs. Table 3 provides a chronology of events related to YETI and the requirements for pre-SLPs and pre-Psycs.

### Table 3

**Chronology of events**

<table>
<thead>
<tr>
<th>Events</th>
<th>Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preservice professionals are notified of clinical placement in YETI program</td>
<td>SLP &amp; Psychology students</td>
</tr>
<tr>
<td>Preservice professionals were invited to participate in this study</td>
<td>SLP &amp; Psychology students</td>
</tr>
<tr>
<td>3-week didactic autism course</td>
<td>SLP students only</td>
</tr>
<tr>
<td>Pre-intervention interviews were conducted</td>
<td>SLP &amp; Psychology students</td>
</tr>
<tr>
<td>6-hour YETI training</td>
<td>SLP &amp; Psychology students</td>
</tr>
<tr>
<td>YETI clinical preparation; 3 full days in clinic</td>
<td>SLP students only</td>
</tr>
<tr>
<td>YETI intervention – week 1 (behavior and language)</td>
<td>SLP &amp; Psychology students</td>
</tr>
<tr>
<td>Post-intervention interviews were conducted</td>
<td>SLP &amp; Psychology students</td>
</tr>
<tr>
<td>Diagnostic clinic</td>
<td>SLP students only</td>
</tr>
<tr>
<td>YETI intervention – week 2 (language only)</td>
<td>SLP students only</td>
</tr>
<tr>
<td>2-month follow-up interviews were conducted</td>
<td>SLP &amp; Psychology students</td>
</tr>
</tbody>
</table>

**Interviews.** Qualitative methodology was the only method of data collection. Data were gathered using semi-structured interviews with the pre-SLPs and pre-Psycs. Semi-structured interviews allowed participants to use their own words to describe knowledge and perceptions without the limitations of structured interview questions (Dearnley, 2005). Open-ended questions were used in the time one interviews, time two interviews, and time interviews. The open-ended nature of the questions encouraged reflection and rich description, allowing for insightful
concepts to emerge (Dearnley, 2005). Throughout the interviews, follow-up questions were asked for clarification and to ensure that an accurate representation of the students’ experiences was being recorded. Information from the interviews was not omitted or interpreted by the transcriber. Reflections are “an important human activity which enables people to recapture their experience, think about it, and evaluate it” (Boud et al., 2013). Conducting interviews approximately two months post-intervention allowed the pre-SLPs and pre-Psycs time to reflect and consolidate what they learned and experienced and better articulate facilitators and barriers to their success in learning from the IPC experience.

Field Notes. The researcher documented field notes throughout the week. Field notes are descriptions of people, places, activities, and interactions; and they are a useful tool for recording ideas, reflections, and patterns emerging throughout the study period (Glesne, 2006). Per the recommendation of Glesne (2006), the notes were both descriptive and analytic, striving for accuracy and avoiding judgement. Field notes were recorded throughout the morning and evening meetings. Morning meetings occurred before clients arrived for the day and afternoon meetings occurred immediately after clients left for the day. The meetings were audio recorded for cross-reference by the researcher.

Trustworthiness. In full disclosure, the first author is a master’s degree seeking graduate student in the Speech Language Hearing Sciences program at the University of Montana. Some of her peers were research participants, thus a biased relationship was potentially present between interviewer and interviewee. Creswell and Poth (2018) outlined validation strategies and recommend the researcher choose at least two for any given study. In the current study, biases were managed by triangulating multiple data sources, member checking, and an external audit of the data. Triangulating multiple data sources aides in the validity of the findings because
multiple data collection methods and multiple data sources further develop the themes and perspectives presented (Creswell & Poth, 2018). The current study used interviews and field notes to corroborate the data collected. The second validation strategy was member checking, where the researcher shared interview transcripts with research participants to make sure their thoughts and perspectives were represented accurately (Glesne, 2006). Member checking adds credibility to the findings because the participants have the opportunity to judge the accuracy of the data and make clarifications as needed (Creswell & Poth, 2018). Stake (1995) stated that participants should play a major role in reviewing the interview transcripts in case study research to provide alternative language if desired. The final validation strategy utilized was an external audit of the data. An undergraduate SLP student with a background in research examined a subset of the interview transcripts and developed codes. The undergraduate student had no connection to the study. Findings, interpretations, and conclusions supported by the data were verified by the external auditing process.

Data Analysis

The 30 interviews (10 interviewees x three interviews) were audio and/or video recorded and then transcribed verbatim. Transcriptions were accurate and detailed, without fabrication or interpretation. Pseudonyms were assigned to participants who requested their identity be kept confidential. Manual manipulation was used to identify categories and themes related to the pre-service professional’s IPC experience. Three rounds of coding were completed (open, axial, and selective) to extract themes and re-connect the themes to the participants’ voices and their stories. Open coding involved finding patterns and similar language between the participants’ interviews. Axial coding involved grouping the codes from open coding into more specific
categories related to interprofessional education and collaboration. Selective coding involved taking the categories from axial coding and further grouping them into themes.

The themes were verified through the lenses of the researcher, participants, and external auditor. The researcher used data triangulation of the interviews and field notes to verify the validity of the data. Participants reviewed their interview transcripts (Time 1, Time 2, and Time 3) prior to the start of qualitative coding, a process known as member checking. Lastly, the data were verified by an external auditor after coding was completed. In addition, the first author checked in with two faculty mentors bi-weekly throughout the process.

Results

Themes and corresponding sub-themes were first categorized by the time period in which the interview occurred (Time 1/pre-intervention, Time 2/post-intervention, or Time 3/two months following intervention), then by whether the theme was a benefit of interprofessional education (IPC) or a struggle/barrier of IPC. Specific participant quotations were included to depict the essence of each theme.

Pre-Intervention Themes

Pre-intervention interviews (Time 1) occurred the week prior to the pre-service professionals’ Youth Engagement Through Intervention (YETI) training. Due to the types of questions asked, the themes at Time 1 were easily categorized into anticipated benefits of working interprofessionally with other pre-service professionals and anticipated struggles. The themes categorized as anticipated benefits include: learning and growing together and building an interprofessional support network. A sub-theme of learning and growing together is gaining knowledge along with a different perspective. The themes associated with anticipated struggles
SLP AND PSYCH STUDENTS’ PERCEPTIONS OF AN INTERPROFESSIONAL AUTISM INTERVENTION

are: *same goal, different steps to get there* and *when you don’t know each other’s jobs*. Themes for the time one interviews are summarized in Table 4.

**Table 4**

*Pre-intervention themes and sub-themes*

<table>
<thead>
<tr>
<th>Theme Number</th>
<th>Theme Name</th>
<th>Anticipated Benefits/Struggles</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Learning and growing together</td>
<td>Anticipated Benefit</td>
</tr>
<tr>
<td>1.1</td>
<td>Gaining knowledge along with a different perspective</td>
<td>Anticipated Benefit</td>
</tr>
<tr>
<td>2</td>
<td>Building an interprofessional support network</td>
<td>Anticipated Benefit</td>
</tr>
<tr>
<td>3</td>
<td>Same goal, different steps to get there</td>
<td>Anticipated Struggle</td>
</tr>
<tr>
<td>4</td>
<td>When you don’t know each other’s jobs</td>
<td>Anticipated Struggle</td>
</tr>
</tbody>
</table>

**Theme 1: Learning and growing together.** In the Time 1 interviews, participants frequently discussed the anticipation of learning from different members of the team and how their learning would lead them to growing in their clinical skills. As Ruth, a pre-service psychologist (pre-Psyc), stated when asked about anticipated benefits of working with pre-service Speech-Language Pathologists (pre-SLP), “just learning from them I think is the biggest one and [learning] different domains.” Angela (pre-SLP) also commented, “I’m just going into this as wanting to learn from everyone.” Ruth and Angela’s statements accurately represent how participants expressed eagerness to learn from one another throughout the YETI intervention. A sub-theme that emerged from the main theme of learning and growing together was *gaining knowledge along with a different perspective*.

**Subtheme 1.1: Gaining knowledge along with a different perspective.** Pre-service professionals discussed learning about the other profession’s scope of practice and developed a different perspective about working with school-aged children with autism. When asked what
she thought about the opportunity to work with pre-service psychologists, Kathleen (pre-SLP) remarked, it’s a good opportunity to “have support from a different angle and different perspective because our perspective will be social communication and…their perspective will probably be well-being.” Ellie (pre-Psyc) said, our goals “are…applied behavior analysis, whereas theirs is very language-based and helping them …with different language components.” In these statements, Kathleen and Ellie recognized that different perspectives exist while delineating a subtle difference in the expertise of SLPs versus psychologists.

Participants noted the limited opportunities for interprofessional training. Ellie (pre-Psyc) remarked, “I think I’ll learn a lot more about exactly what they look at and what these other disciplines look at because I feel like often in my own program we don’t get a lot, a ton of exposure to other disciplines unless we seek it out…” Ruth (pre-Psyc) had stated in her interview that she was not as familiar with the scope of practice of an SLP, yet expressed excitement about the opportunity to learn more. Throughout time one interviews, participants repeatedly stated that they did not know the specifics of what the other professional does in the workplace, yet expressed excitement and interest toward learning more about their scope of practice.

Often in gaining a new or different perspective, pre-service professionals also acquire new skills related to working with a specific population. When asked about the anticipated benefits of working with pre-Psycs, Kiley (pre-SLP) commented, “I would imagine we’d learn how to manage behaviors in a different way.” Angela (pre-SLP) said, “I think that we can use different areas of EBP…to develop a more stronger lesson plan.” Kiley showed that she was anticipating learning more about behavior management, while Angela discussed the perspective, knowledge base, and evidence-based practice (EBP) of psychologists, which when combined with SLP knowledge and EBP will create a stronger lesson plan.
**Theme 2: Building an interprofessional support network.** This theme emerged from pre-service professionals discussing how teamwork, supporting one another, and good communication improves client outcomes. As Sharon (pre-SLP) stated, “…we’re part of a team and even if you’re in private practice you’re gonna still encounter the team need and you know I think it all is that holistic approach…we all need to be able to work together.” The holistic approach comes from being able to work with other professionals in your own workplace, but also across settings.

Collaboration was a topic commented on by more than half of the participants in their Time 1 interviews. Participants talked about the opportunity to practice collaborating, collaboration as a skill set, working as a team to better meet the needs of the clients, and building support networks outside one’s own field. Part of building a support network of professionals outside one’s field is beginning to form trusting relationships. Charlotte (pre-Psyc) commented that it is important to “…understand what they do and how they can support you and how you can support them is really, really helpful.” Angela (pre-SLP) also commented on developing relationships and learning how to support one another. She said, “We need to be connecting with them and developing…professional relationships…I’ve seen in a school where that isn’t there and it’s difficult and the more we can build these relationships in school and get used to working interprofessionally, the better off we will be.”

**Theme 3: Same goal, different steps to get there.** Participants were asked about anticipated struggles of working with another pre-service professional. Participants voiced concerns about potential differences in professional jargon, background knowledge, and therapeutic approach. These concerns are valid; speech-language pathologists and psychologists do use different professional jargon, tend to focus on different aspects of their clients’ needs and
skills, and develop treatment plans that target those aspects under scrutiny. The language for the theme was extracted from a statement made by Kathleen (pre-SLP). She stated, “When we are all working for the same goal, if we have different steps to get there, it can be tension-building…” The possibility of tension was echoed by other participants as they discussed issues and conflicts that may arise.

Ruth (pre-Psyc) expressed concerns about the potential miscommunications that could arise during interprofessional interactions due to the variations in professional-specific jargon used. Limited understanding of the profession-specific jargon can be a barrier resulting in restricted communication between the two professionals. Miscommunications could also arise from differences in background knowledge (i.e. years of schooling, field of study, prior knowledge of autism spectrum disorders (ASD), or experience with a friend/family member with ASD). Charlotte (pre-Psyc) talked about a potential struggle being expertise that is not overlapping. She spoke of the ease of communicating with psychologists who have a similar vocabulary and educational background and the potential difficulty of trying to explain a therapeutic approach to a pre-service professional with a different educational background. Charlotte went on to say, it “may be challenging if someone doesn’t have that same level of experience.” Trying to solve problems with someone whose background knowledge differs from your own can lead to miscommunication and misunderstandings.

Sharon (pre-SLP) voiced concern that psychologists may be unprepared to embrace a perspective that is not their own. She said, “diversity is a good thing, but it also causes some conflicts…especially if people aren’t necessarily ready to accept another perspective.” Maggie’s statement was in response to a question about potential struggles working with pre-service
psychologists. The diversity Sharon spoke of is differences in perspective, which can arise from differences in background knowledge, profession-specific jargon, and therapeutic approach.

**Theme 4: When you don’t know each other’s jobs.** While this theme is categorized as a barrier to the success of IPC, it can also be viewed as a benefit. Prior to the collaboration, pre-service professionals acknowledged a potential struggle working with other professionals, as well as discussing how learning more about them while still in school can improve the working relationship in the future. *When you don’t know each other’s jobs* includes discussion regarding the lack of knowledge of other’s responsibilities, role distinction and overlap, and professionals utilizing only their own expertise.

Rob (pre-SLP) shared an anecdote regarding his previous job in the medical field. He commented, “there’s just always a split between the people on the front line and the people who were a little higher up because you don’t know each other’s jobs.” In his interview, Rob went on to discuss how limited understanding of another team member’s role can negatively impact communication. Rob also commented on the impact poor role distinction can have on professional relationships, “if you don’t know what somebody else does, you can’t fully respect it, and so you can’t discern or separate what they do from what you do and how you should collaborate.” Brooke (pre-SLP) said, a challenge can be “not crossing lines and getting in somebody else’s territory, but knowing where your specialties are and being very discreet about that.” Through their comments, Brooke and Rob acknowledged the importance of professional role distinction in balancing professional autonomy with professional collaboration. Professional autonomy requires respecting one another’s independence in making decisions based on their own clinical expertise. One must be knowledgeable about collaborators’ roles for this trust to develop. One must also be knowledgeable about collaborators’ roles when determining how each
professional’s skills and expertise can complement and strengthen the team to improve client outcomes.

Kathleen (pre-SLP) stated, “I’m excited to learn a lot more about what they do because I think that’s a lot of the problem, not problem, but a lot of the difficulty with um working in schools or working on a multi- or interdisciplinary team because everyone knows exactly what they do, but it’s hard to communicate that to other people, especially when you’re so busy already.” Full caseloads and a busy schedule are contributing factors to lack of time to learn more about each other’s roles. Kathleen has recognized the difficulty of learning “on the job” and expressed excitement for learning more about psychologist’s scope of practice while still in a pre-service program.

Ruth (pre-Psyc) commented, “I think professionals can get like pigeonholed into ways of viewing things sometimes and to be able to communicate across disciplines can be really helpful.” Ruth has pointed out a major barrier to IPE – professionals, especially those who have been in the field a long time, have specific way of doing things. Inability to think flexibly about a case can limit problem solving abilities and thus the student outcomes.

Post Intervention Themes

Post intervention interviews (Time 2) were completed the week following the YETI intervention. The same interview questions were asked during the Time 2 interviews as the Time 1 interviews, thus themes were naturally categorized into the benefits and struggles categories. Benefits of working with other pre-service professionals were learning and growing with other pre-service professionals and beginning to grasp the different academic world we come from. The two sub-themes under beginning to grasp the different academic worlds we come from were categorized as struggles: we do have a different language; it made communication difficult and
the importance of appropriate language complexity level. Table 5 provides a summary of the time two themes and sub-themes.

Table 5

<table>
<thead>
<tr>
<th>Theme Number</th>
<th>Theme Name</th>
<th>Benefit/Struggle</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Learning and growing with other pre-service professionals</td>
<td>Benefit</td>
</tr>
<tr>
<td>2</td>
<td>Beginning to grasp the different academic worlds we come from</td>
<td>Benefit &amp; Struggle</td>
</tr>
<tr>
<td>2.1</td>
<td>We do have a different language; it made communication difficult</td>
<td>Struggle</td>
</tr>
<tr>
<td>2.2</td>
<td>Importance of appropriate language complexity level</td>
<td>Struggle</td>
</tr>
</tbody>
</table>

**Theme 1: Learning and growing with other pre-service professionals.** Learning and growing with other pre-service professionals emerged from participants discussing what they thought of working with another pre-service professional and the benefits of the experience. This theme carried over from the initial interviews. The title for the theme was derived from two quotes from Brooke and Ellie. Brooke (pre-SLP) said, “Seeing where we’re learning and growing together and trying to find out our roles and how they intertwine and how they don’t and creating those boundaries.” Ellie’s (pre-Psyc) statement was, “I also liked that they were pre-service students because then it felt like a more similar place. I am also pre-service, so there are things I am still learning and to see that all these speech-language pathology students are also learning at the same time, it kind of brings it into that common space between us.” Their comments lay the foundation for other topics discussed by participants that were categorized under this theme. These topics were learning more about their own role, role distinction with the
other pre-service professional, and collaborating while utilizing teamwork and communication strategies.

Developing a better understanding of your own role on an interdisciplinary team and being able to distinguish that from another professional’s role is a valuable skill to begin developing during graduate school. Brooke (pre-SLP) mentioned it being a “challenge to make sure that we could draw lines and know our own roles.” Angela (pre-SLP) echoed this thought in her interview, stating, “it was really great to see that side…often you don’t get to meet outside of your…realm, outside of your cohort. So it’s really important to be able to meet these people and understand what they do.” Brooke and Angela are saying, as pre-service professionals are immersed in the rigor of a graduate program, all of one’s energy is devoted to learning as much as possible about one’s role, without giving much thought to how can another discipline can complement one’s own expertise. Angela expressed it was nice to have the opportunity to not just think about my professional role as an independent entity, but how I fit in with an interdisciplinary team so they we can collectively form a cohesive unit.

Pre-SLPs discussed learning more about the expertise of psychologists. For example, there was a client who had recently experienced a death in the family. One of the psychologists had extensive training in working with clients who have experienced grief, trauma, and loss. Sharon (pre-SLP) had the opportunity to learn from the psychologist and further develop her understanding of the psychologist’s role on the team. Sharon said, it was “fun to see and say oh we have…the resources; we have the capabilities to help beyond what he is here at camp for.” Kathleen (pre-SLP) spoke of learning strategies from the psychologists. She said, “without the behavioral part of the intervention, I don’t think he [Kathleen’s client] would’ve had the successes that he had that week.” Through support from psychologist and psychology students
Kathleen was better able to support her client who had significant behavior and language challenges.

Collaboration was an expectation during YETI. Each day a team consisting of one pre-SLP and one pre-Psyc taught a lesson. Prior to their day of co-teaching, the pre-service professionals were expected to collaborate to develop a lesson plan for the day. While some teams were effective and reported no problems with collaboration and planning, others struggled with differing communication styles and expectations. When asked about struggles with working with the other pre-service professional, difficulty with the planning phase and development of the lesson plans was discussed, mostly by pre-SLPs. Sofia (pre-SLP) commented, “just collaborating with my partner…I think it was just the activity part…I was more focused on language aspects, so trying to collaborate was a little bit challenging sometimes as far as planning went.” Kathleen (pre-SLP) also talked about implementation of the lesson plans during YETI. She said, “Some days the collaboration went really well and those were the days where the lessons were especially successful and, on the days, when the collaboration wasn’t really there…you could tell when the lessons were going through that just wasn’t quite as smooth.” Sofia (pre-SLP) and Kathleen’s (pre-SLP) comments speak to some of the challenges associated with trying to collaborate across disciplines. Learning and growing with other pre-service professionals can be concluded with the following quote by Ellie (pre-Psyc): “Often times we kind of misconstrue what exactly is going on with each of these different professions…I do enjoy getting that extra aspect of learning, you know what it is they do and how they help these children in different ways and what they focus on and what they go to school for.” The participants’ voices reflect the benefits and challenges of learning collaborative skills during an interprofessional collaboration experience.
Theme 2: Beginning to grasp the different academic worlds we come from.

Psychologists and SLPs approach to working with clients on the autism spectrum varies from perspective and problem-solving strategies to background knowledge and professional jargon. One of the many valuable aspects of YETI is gaining exposure to these differences in a pre-service setting, as opposed to learning in the workplace, where differences may be more difficult to work through. The title for this theme was inspired by a quote from Kathleen (pre-SLP). In response to being asked what she thought about the experience of working with pre-service psychologists, she said, “It was eye opening in 1000 different ways…understanding the different worlds we come from and while also having different priorities in what we’re doing.” Kathleen commented on some of these differences and how you don’t know they are there until you experience them firsthand.

Difference in perspective being both a benefit and a struggle was reiterated by participants during the time two interviews. Kiley (pre-SLP) said, when asked about benefits of working with pre-service psychologists, “different insight and…adding a new…lens of looking at things.” Kiley provided an example she observed during YETI that demonstrated the two different perspectives. She said, “I know that one person wanted to do a pointing game, like ‘my name is Kiley and your name is’ and point to the person; where the psychologist was like oh pointing is going to teach them bad behaviors and that’s not okay.” Kiley explained that this experience altered her perspective on the activity. In that situation, the pre-SLP thought the activity would be a good way of encouraging communication, while the pre-Psyc viewed the activity as reinforcing a behavior that may not be appropriate in other situations. While these types of conflicts can be a struggle, they are also learning opportunities. Ruth (pre-Psyc) talked in her interview about “wrapping around the services that we are providing with different
perspectives.” These different perspectives bring different ideas, which can ultimately benefit the client because problem-solving for treatment is being approached from different viewpoints.

Another conflict discussed by participants was the use of person-first language and whether it is okay to refer to someone as “autistic.” The pre-SLPs had learned it was acceptable to refer to someone as autistic if the client has made that choice and communicated it with those around them. One pre-Psyc who was defending person-first language was not aware of this perspective. The conflict about the use of person-first language continued throughout the intervention week and appeared to make an impression on the pre-service professionals.

In spite of the conflicts, many of the participants felt as though issues could be handled quickly. Rob (pre-SLP) stated, “there were some differences in approach that I didn’t think were the end of the world. I thought that they were pretty easily resolved.” The ability to resolve conflicts and continue working as a team is an invaluable skill to develop while still in a pre-professional program.

Sub-theme 2.1: We do have a different language; it made communication difficult.

Along with a different approach and background knowledge, SLPs and Psychologists use different professional jargon. It is common for two pre-service professionals to be working together and working toward the same goal, but misunderstanding one another because they do not understand the profession-specific jargon. When asked about struggles during YETI, participants repeatedly noted differences in terminology and difficulty with communication.

When asked about struggles, Ellie (pre-Psyc) said, understanding “different nuances to each field and how to kind of get that language barrier because you know we have a very particular way of speaking and focusing on things and that actually came up.” In her interview, Ellie discussed the importance of “reaching a middle ground” to understand exactly what each
person on the team is focusing on. Angela (pre-SLP) noted that absence of a common vocabulary can create a disconnection between the two professions. She said, “I noticed we were kind of separate but together rather than working together as a cohesive unit…there was no communication as to what was occurring.” When two professionals do not understand each other’s terminology there can be a lapse in communication.” Kathleen (pre-SLP) further described this in her comment: “communication beforehand in the prep week. I think it could have been a lot better on both our sides.” She said, “I just didn’t feel like I could put the same expectations for her to help on her.” Kathleen spoke about not feeling as though she could expect the same amount of work from her pre-Psyc partner because of a difference in clinical expectations. In this pre-service professional’s view, the communication breakdown happened because of unclear expectations on to how to divide the lesson planning workload. Pre-service professionals felt unsure about workload expectation and many did not seek clarification from their supervisors.

This sub-theme will be concluded with a quote from Brooke (pre-SLP), who said, “communication I would say was hard…we do have a different language.” In her interview Brooke explained how it was difficult trying to explain to psychologists the importance of language complexity and how kids will misinterpret the intended meaning of the message if the language is too complex. This idea is explored more in the next sub-theme.

**Sub-theme 2.2: Use of age-appropriate language complexity level.** The sub-theme use of age-appropriate language complexity level is all about pre-SLPs teaching pre-Psycs about the importance of language complexity in communicating a message in individual treatment activities and whole group lessons. If the language is too complex for the client, then the activity will be too difficult because the intended message will not be understood by the client.
Pre-Psycs talked about learning the importance of language complexity in a lesson. Charlotte (pre-Psyc) said, “I may want to change behavior, but the way I tell a kid to change the behavior is really important and so I think that’s more in the expertise of the speech-language pathologist; to understand how can I phrase this objective in a way this kid is going to understand.” Ellie (pre-Psyc) commented, “learning how to help and utilizing that language piece because I feel like often times psychologists, we do focus on language, but not to the extent that everybody else does. We don’t realize how impactful language can be with implementing different treatments.” Charlotte (pre-SLP) and Ellie (pre-Pysc) commented that how language and behavior are intertwined was a new insight. The value of SLPs and psychologists working together is they can complement each other in these areas.

Pre-SLPs also discussed the experience of teaching psychologists about the importance of language complexity in lesson plans. Sofia (pre-SLP) stated, “just trying to explain – oh I think we should word this more like their language skill. I think that was kind of hard or the activities…they would be too hard for them.” Sofia was concerned that certain lessons would not be well received by the clients because their content was too advanced. Brooke (pre-SLP) summarized what she felt the pre-Psycs gained in terms of understanding language complexity from pre-SLPs by saying, “They understood now that our role of language on how to explain emotions has to be based on the language level of the child.”

Two-Month Follow-Up Themes

Final interviews occurred two to three months following the conclusion of the YETI program, depending on the availability of the participants. The two-month follow-up (Time 3) interview questions were created to examine participants’ responses after they had time to
distance themselves from the IPC intervention and reflect on the experience. Table 6 provides a summary of the themes and subthemes noted at Time 3.

Table 6

<table>
<thead>
<tr>
<th>Theme Number</th>
<th>Theme Name</th>
<th>Benefit/Struggle/Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>This experience intensified the importance of knowing the other profession’s scope of practice</td>
<td>Benefit</td>
</tr>
<tr>
<td>1.1</td>
<td>More inclined to refer out to psychologists</td>
<td>Benefit</td>
</tr>
<tr>
<td>2</td>
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**Theme 1: This experience intensified the importance of knowing the other profession’s scope of practice.** Throughout the themes noted at Time 1 and Time 2, it was reiterated that it is helpful to understand the roles and responsibilities of each member of the team to enhance teamwork and improve communication between team members. In the case of pre-service professionals beginning YETI, most had limited to no understanding of the other profession’s scope of practice. During their Time 3 interviews, participants commented on the importance of knowing the scope of practice of the professionals with whom you are partnering. When asked about what was impactful about working with students from another department, Rob (pre-SLP) said, “it kind of rammed home the importance of having a healthy curiosity and want to know about what other people do and their position as part of the team.”
she experienced a change in perception of psychologists, Angela (pre-SLP) said, “it intensified the knowledge…of where they work within their scope of practice. And how we as SLPs should really team up with them to serve our caseload better from a two-pronged approach rather than a single-pronged approach.” Angela and Rob are speaking to the power of teamwork and the positive impact teamwork can have on client outcomes.

Knowing how professionals can complement one another and help support one another makes the interprofessional team even stronger. Charlotte (pre-Psyc) expressed surprise at how much overlap exists between SLPs and psychologists in social skills intervention settings. She said, “I grew in my understanding of what an SLP is…I didn’t know much before about what the speech-language pathologist does or what their expertise was…I was surprised by how much overlap there is.” When reflecting on her YETI experience, Ruth (pre-Psyc) commented, “One thing I found very valuable was that we were able to work kind of like across fields. I learned more about what school psychologists do and also what speech paths do.” Ruth learned more about SLPs’ scope of practice, but also school psychologists. This is a proven outcome of IPE-learning more about other’s scope of practice as well as your own.

Sub-theme 1.1: More Inclined to refer out to psychologists. During the interviews at Time 3, pre-SLPs expressed learning more about the scope of practice of a psychologist, and several participants mentioned being more likely to refer clients to psychologists after the YETI experience. Kiley (pre-SLP) said, “it would be useful for them [children with autism] to have a psychologist to help better explain those cognitive thoughts…I would definitely be more inclined to refer out if I saw any problem behaviors.”

In Maggie’s (pre-SLP) interview, she repeatedly referred to an experience she observed where one of the clients had very recently experienced a death in the family. One of the
psychologists had expertise working with children who were experiencing grief or had past trauma. After observing several conversations, the psychologist had with the client, Sharon (pre-SLP) said, there were “certain things I never would have thought of, like the grief and trauma part of things.” Sharon informally acquired knowledge of the different roles and responsibilities psychologists have when working with a child.

**Theme 2: The value of interprofessional experiences during graduate school.** The opportunity to engage in IPC experiences during graduate school has tremendous value because it’s a chance to learn the skills required to work on an interprofessional team prior to entering the workplace. While YETI did not have an explicit IPE component during training, through collaboration, pre-service professionals were able to learn interprofessional skills. Charlotte (pre-Psyc) said, “I reflected with my supervisor about YETI and how it was such a unique opportunity to start working with the students from another department in graduate school.” Charlotte discussed with her clinical supervisor how opportunities like YETI, where pre-service professionals get to collaborate on lesson planning and therapy for clients, are unique.

Learning from one another, while discussed less frequently during the time three interviews, was still a topic mentioned by participants. Ellie (pre-Psyc) said, “I appreciated learning from them. I think there’s so many different things you can learn from other people in different fields. I am always amazed that they are looking at the same kind of problem in a totally different lens.” Further, Brooke (pre-SLP) spoke about learning from the supervisors during YETI and the importance of keeping an open mind when receiving that feedback. She said, “they want to make you a better clinician because they have had that experience…they were getting the same and different feedback from their supervisors. And just go with it and don’t feel like you’re failing.”


Several sub-themes emerged from the main theme of the value of interprofessional experiences during graduate school. These subthemes are they are our partners and should be, co-teaching, teaching and learning how to better communicate with clients, and helped mature me as a clinician.

**Sub-theme 2.1: They are our partners and should be.** This subtheme was named to describe the change in perception the participants expressed during the interviews at Time 3, and the words came from Angela (pre-SLP). Angela said her biggest change in perception was “they are our partners and should be.” Several participants stated they did not experience a change in perception; however, others spoke about the importance of a partnership between SLPs and psychologists in a school setting. Ruth (pre-Psyc) said, “at the beginning I don’t think I had too many perceptions because I didn’t know what they did…at the end of YETI I feel like I was able to work pretty closely with them and kind of learn how they conceptualize cases and what practices they implemented, how they could help.” Kiley (Pre-SLP), when asked if she experienced a change in perception of psychologists said, I am “more confident in working with them toward the end of it. I think psychologists are really important aspects for kids with autism.” Both Ruth and Kiley’s statements show an appreciation for the other profession and greater confidence with working collaboratively.

Sofia (pre-SLP) said, “Now I really appreciate the experience because…now I can really see how they work together and I mean I knew that, but like now seeing it makes me glad we did that.” Earlier in her interview, Sofia had expressed initial annoyance with having to co-teach with psychologists during YETI; however, realized the value of that partnership. Sofia was one of the participants who completed her Time 3 interview after she had started her practicum for fall semester. Sofia had the opportunity to observe interprofessional practice and made the
following comment: “how they work with like the paras or the special ed teacher and I think that was one of these things from YETI, just kind of the importance of really communicating and working together with other professionals.” Communication and teamwork are two of the aspects that make interprofessional practice effective. Sofia had the opportunity to observe this and then connect it to her YETI experience.

**Sub-theme 2.2: Co-teaching.** Participants were asked about the experience of co-teaching during their time three interview. It is a sub-theme of *the value of interprofessional experience during graduate school* because participants spoke of it being both a positive and negative experience, yet important to the development of clinical skills.

Angela (pre-SLP) said, “co-teaching is an invaluable resource because that’s what’s going to happen and we need to learn how to work with all groups.” Angela went on to say, “I thought it was going to be more co-teaching on every level model, rather than divide and conquer.” This was discussed by other pre-SLPs too. There was an expectation that co-teaching would be more collaborative, when in fact it turned out to be more of a “divide and conquer” approach. Kathleen’s (pre-SLP) perspective was, “I remember feeling like very overwhelmed with what the school psychs knew and kind of their headstrong direction on how they wanted everything to go…I wish we could have met them more as equals.” Kathleen felt as though the partnership between her and her co-teacher was unbalanced. She went on to talk about learning how to work with those who are less invested and continuing to work through difficulties with her co-teacher. Kathleen’s co-teacher had a different perspective on their collaborative relationship. Kathleen’s co-teacher, Ruth (pre-Psyc), stated, “it was great to collaborate with my co-leader and develop a lesson plan. We had all these ideas and…a schedule and times. We felt pretty prepared going in and then the day just kind of went wild.” Ruth goes on to talk about the
importance of flexibility in implementing lesson plans. Ruth felt that collaboration went well and the breakdown was in the chaos of situation while co-teaching, not their collaborative relationship.

Rob (pre-SLP) had similar views on the lack of flexibility in psychologist’s approach to lesson planning due to lack of understanding of SLP’s perspective. That being said, he rounded out this comment by saying, “…it’s just about this feedback loop all the time. Like we’re giving them feedback, they’re giving us feedback and I think as long as you know where they’re coming from and they know where you’re coming from, those lines of communication really work.” Collaborative relationships take time, perseverance, and communication.

Further, Brooke (pre-SLP) said “Sometimes work isn’t evenly distributed because of different motivation levels, even different confidence levels with each teacher.” Brooke brings up two more aspects that make interprofessional teams successful - ambition and self-motivation to get work done and confidence in teaching the content. Sofia (pre-SLP) said, “the teaching part I really enjoyed. I feel like with areas where I didn’t feel as confident to teach, then I feel like my partner was really great at kind of helping with that.” Sofia spoke of feeling supported by her co-teacher, especially in those content areas where she felt less confident. Charlotte (pre-Psyc) had a similar experience. She said, “I felt very supported by my co-teacher…it was very interesting the different approaches that we had…she was in charge of one lesson and I was more in charge of the other, but we definitely collaborated.”

Another challenge or struggle the participants discussed during co-teaching was problem solving together with two different perspectives. Sharon (pre-SLP) said, pre-service psychologists are “coming from a totally different place, like education wise, even though we have kind of similar background as far as taking classes and reading material.” Sharon was
assuming that the pre-service psychologists had taken an autism class, just as the pre-SLPs had, when in fact that was not a requirement for their program. Ellie (pre-Psyc) commented, trying to “figure out how to approach the same problem but looking at it from each one of our domains and respecting the other person, that was something we had to learn throughout the process.” Learning to respect the other member of your team is an essential component to an interprofessional team.

Through the discussion of co-teaching, many participants came back to the idea of compromise. Sharon (pre-SLP) commented on the importance of “trying to find that middle ground…you don’t necessarily agree with everything that anyone brings to the table.” Brooke (pre-SLP) said, “sometimes you might not agree on everything…compromise is everything.” Not agreeing on everything is normal, the important part is the way the team compromises to reach a solution for their clients. The value of compromise is powerful interprofessional skill to learn during graduate school.

Sub-theme 2.4: Teaching and learning how to better communicate with clients.

Adjusting the language level used while teaching to meet the needs of the client was a theme from the time two interviews. This idea was reflected upon in the Time 3 interviews as well, however; by fewer participants. For this reason, teaching and learning how to better communicate with clients is categorized as a sub-theme under the value of interprofessional experiences during graduate school.

Charlotte (pre-Psyc) when asked about what she thought of working with students from another department commented on the “attention they [pre-SLPs] paid to language being used and the language use for especially reinforcing students.” The language complexity level being used can impact how the client responds to the message. Charlotte noticed that SLPs have an
expertise in this area and are attuned to the language they use and coaching other team members on how to adjust their language levels.

One aspect that is different from the Time 2 discussion of language use is in her Time 3 interview, Brooke (pre-SLP) talked about learning more about language complexity level. She said, “I learned a lot about language, in terms of how we, as speech therapists, need to change our language to change it for the client and for comprehensive reasons.” Brooke’s comment speaks to pre-SLPs learning more about their own role on an interprofessional team.

Sub-theme 2.5: Helped mature me as a clinician. The last subtheme under the value of interprofessional experiences during graduate school is helped mature me as a clinician. Participants discuss how they have grown and matured as clinicians through working with one another and with clients on the autism spectrum. The subtheme was named from a statement by Kathleen (pre-SLP). Kathleen said, “it [YETI] helps mature you as a clinician.” She went on to say, “It [YETI] answered all the questions I knew I had and a lot of questions I didn’t know I had…There’s no coddling. It’s like you can do it. Go do it…” Brooke said the following about maturing as a clinician, “I grew from working with individuals with autism. I expanded my clinical expertise, in terms of evidence-based practice. I got to see the difference in school psychs and how we collaborate, but we have very different roles.” Kathleen (pre-SLP) spoke of growing as a clinician through independence, flexibility, and an understanding that things will go wrong. Brooke (pre-SLP) commented on learning more about evidence-based practice, collaboration, and role distinction from psychologists.

Angela’s backpack, while not a subtheme of its own, was a tool discussed by pre-SLP participants throughout the time two and time three interviews. Angela’s “backpack” refers to an SLP’s list of therapeutic strategies or grouping of ideas on how to problem solve during tricky
clinical situations. It is termed “Angela’s backpack” because Angela was seen by other pre-service professionals as someone who always had another idea or another “trick up her sleeve” in a situation that needed a solution. The participant researcher observed the term “backpack” being used throughout the week to talk about SLP’s strategies or ideas. Angela’s “backpack” was also discussed during an afternoon meeting where another pre-SLP wanted to call Angela “Dora” because of her backpack. Angela’s response was “I am always prepared”. Kathleen and Rob both referenced “Angela’s backpack” during their Time 3 interviews. Kathleen (pre-SLP) commented, “even if you’re the most prepared person with your backpack on your shoulders, things are still going to go wrong.” Rob (pre-SLP) stated, “I see possibilities for evidence-based practice everywhere now…it just builds my confidence you know going forward. I will be able to do this…even without Angela’s backpack.”

Sharon (pre-SLP) talked about there being a “…big learning curve as a student clinician” She said, “I think that there are things you can prepare for in the classroom, but there’s things that you won’t have any idea until you are confronted with it in the real clinical experience…I want to work on…being a little more diplomatic in my answers….we don’t necessarily know everything about everybody and like that willingness to be diplomatic is super important.” In her comment, Sharon referred to an incident discussed more in the Time 2 interviews about person-first language and expressing a difference in opinion without being defensive and having the conversation hurt the interprofessional relationship. Sharon mentioned being more diplomatic in her answers.

Charlotte’s (pre-Psyc) most impactful outcome from YETI is a good summary for this sub-section. She said, “I learned how much I still have to grow and how much more I can learn about myself and my own skills and my own patience working with clients.” All in all, Time 3
interviews were characterized by a tone of reflection, including how the participants grew in their clinical skills and how far they still have before they arrive at being an advanced clinician.

**Discussion and Implications**

The primary purpose of the study was to explore the question: How does participation in an interprofessional intensive social skills intervention for children with Autism Spectrum Disorder (ASD) and related disorders change perceptions and knowledge regarding scope of practice of pre-service Speech-Language Pathology (SLP) and Psychology students? Through the interprofessional collaboration (IPC) experience of Youth Engagement Through Intervention (YETI), pre-service Speech-Language Pathologists (pre-SLPs) and pre-service psychologists (pre-Psycs) had the opportunity to collaborate on lesson planning, co-teach lessons to a group of children with ASD, and support one another through individual social skills intervention. Many of the pre-service professionals started with limited-to-no knowledge of the other professional’s scope of practice, as a result their perceptions of one another were seen through an unknown lens. Pre-service professionals participating in YETI not only grew in their understanding of one another’s roles in a social skills intervention, but also grew to appreciate the experience of collaboration during their pre-professional program. Appreciation for the learning environment and the participation of fellow pre-service professionals is a documented theme of successful IPE (Mellor et al., 2013).

**Changes in knowledge**

Change in knowledge of scope of practice can be viewed through the Interprofessional Education Collaborative (IPEC, 2011) competency of roles and responsibilities. This competency encompasses both the pre-service professional being able to (1) explain their own role as a member of the specific discipline and (2) understand the roles and responsibilities of
other members of the interdisciplinary team. This competency applies to the intensive social skills intervention program, YETI, in that pre-service professionals were expected to communicate their discipline-specific knowledge to their assigned co-teaching partner during lesson planning. Understanding of the other profession’s role was developed through collaboration throughout the week. This is an example of successful IPC because a deeper understanding of the other profession’s role was developed (Dobbs-Oates & Wachter Morris, 2016).

Overall, pre-service professionals did not drastically increase their knowledge of the other profession’s roles and responsibilities with regard to full scope of practice. This was expected because there was not direct instruction on the overarching scope of practice of both professions during the YETI training. The scope of practice (service delivery areas) of SLPs includes assessment and treatment in the areas of: fluency, speech production, language, cognition, voice, resonance, feeding, swallowing, and auditory habilitation/rehabilitation (ASHA, 2016). The parameters defining the professional practice of a school psychologist are: knowledge of instructional processes, understanding classroom and school environments, understanding organization and operation of schools and agencies, application of principles of learning to the development of competence within and outside of schools, consultation with teachers and other school staff about student’s cognitive, affective, social, and behavioral performance, assessment of developmental needs and environmental requirements, coordination of education, psychological, and behavioral services, promoting effective partnerships between parents and educators (American Psychological Association, 2019). In contrast to direct instruction on scope of practice, the pre-SLPs and pre-Psycs learned how the two professions collaborate through interactions during the YETI program and group discussions before and after
social skill intervention each day. Pre-service professionals deepened their understanding of the
other’s roles and responsibilities in the context of a social skills intervention.

**Team meetings.** Each intervention day began with a morning meeting and ended with an
afternoon meeting with pre-service professionals and supervising faculty. Morning meetings
focused on the co-teaching pair (i.e., pre-SLP and pre-Psyc) reviewing the lesson plan for the
day, logistics for the day’s activities, and discussing how pre-service professionals can support
one another with challenging clients throughout the day. Afternoon meetings focused on
reflecting on the day, including each team member sharing a “high point” and “low point” from
the day. Additionally, feedback was provided from supervising faculty regarding success and
what could be improved for the next day. These team meetings were considered field notes, or a
validation procedure, for the current study and were documented via audio recordings of the
morning and afternoon meetings.

Team meetings reinforced the learning and knowledge being absorbed by the pre-service
professionals. As an example, during the Time 2 and Time 3 interviews, pre-SLPs and pre-Psycs
spoke about the importance of using age-appropriate language complexity when designing
activities and teaching lesson plans. A seed for this theme may have been planted in an afternoon
meeting, early in the week, when the supervising faculty for the pre-SLPs recommended being
thoughtful about instructing kids who may be developmentally delayed in language. She
provided the example, “tell me what it means to be safe” as being too broad. A more specific
instruction could be “tell me how you keep your body safe”. An example of the knowledge
gained can be demonstrated with a quote from Ruth (pre-Psyc) during her Time 2 interview.
Ruth initially thought SLPs focus primarily on improving pronunciation; however, Ruth stated:

*It seems like it also extends to speaking in general, which makes sense when you think*
about it, but it’s just kind of about sentence structure and being able to connect with people socially and being able to communicate um effectively.

Faculty supervisors did a fair amount of teaching during team meetings, especially at the end of each day. Feedback and suggestions were provided for how to improve the following day, which assisted with expanding knowledge of each discipline’s expertise. Management of behavior was another topic frequently discussed during team meetings. Rob (pre-SLP) said the following during his time two interview:

*I learned a ton from the [psych] supervisor, um just about what to watch for, what to be attentive to, you know when working with a student, how to deal with it.*

Other topics regularly discussed during team meetings were teamwork between pre-service professionals, personal growth throughout the week (both through self-reflection and comments from supervisors), and observations by supervisors of pre-service professionals continually supporting one another. Each of these topics are reflected in the themes that emerged from the participant’s voices.

While not existing due to an explicit interprofessional education curriculum, knowledge regarding roles and responsibilities during the YETI program increased through interaction between pre-service professionals and their supervisors, as well as team discussions before and after each day of intervention.

**Changes in perception**

Collaboration issues between pre-service professionals that arose throughout the intervention, such as disagreements about person-first language, differences in ideas about lesson planning, and lesson plan execution setbacks, were easily resolved. By the time the last interviews occurred, pre-service professionals were mostly discussing the benefits associated
with working with another professional while still in school. In their IPE study of social work and education interns in a classroom-based setting, Tourse et al. (2005) stated “turf issues” were smoothed over by understanding the need for interprofessional collaboration and the establishment of a shared practice. This statement holds true for pre-service professionals participating in YETI because in order for their lesson to be taught effectively and support for their clients provided when needed, it was important to have a shared goal and understanding of the desired outcome for the clients.

During the Time 3 interview, participants were asked how their perceptions of the other pre-service professional had changed from the beginning of YETI to the end. These ideas were captured under the subtheme they are our partners and should be. Collectively changes in perceptions varied from minimal to very a different perception. Participants talked about an increase in appreciation for the other profession and seeing the value of the other profession, for some this was in their externships. Several participants even talked about the importance of SLPs and School Psychologists collaborating in schools and feeling more confident in their ability to work as a team. A quote from Angela (pre-SLP) provides insight:

I still don’t feel as though I know exactly what they [school psychologists] do, but I have enough confidence to say – ok let’s sit down. This is the problem I’m having, What can we do together?

**Perceived benefits of IPC**

Interprofessional education (IPE) and interprofessional collaboration (IPC) at the university level exists to better prepare pre-service professionals for their role on an interprofessional team. Benefits of IPE have been repeatedly stated in the literature (Casto, 1987; Lapkin et al., 2011; Way et al., 2000), and include the development of shared values, effective
communication, team-based assessment techniques, coordinated interventions, and application of values and ethics while working as an interprofessional team (Council on Academic Accreditation [CAA]).

The number of themes representing the benefits of IPC during YETI far outnumber the struggles. Themes from the current study exemplify the interprofessional competencies outlined by the Interprofessional Education Collaborative (IPEC, 2016). Benefits of IPC as stated by the participants were: learning about one’s own role, learning about the role of other professionals on the team, the value of collaborative experiences, gaining a new perspective, learning different discipline-specific terminology, role distinction, increased inclination to refer out to other professional, learning to adapt lessons with age-appropriate language complexity level, and the value of compromise in a collaborative relationship. Research has shown that skills key to collaboration must be developed, taught, and practiced to build competency and produce effective results (Dobbs-Oats & Watcher Morris, 2016). The collaborative skills developed during the YETI intervention are essential to future success as a member of an interprofessional team and were developed through IPC.

**Perceived struggles of IPC**

During YETI, participants struggled with lack of clarity with roles and responsibilities, communication during the planning phase (time period between YETI training and the start of the intervention), collaboration on lesson plans, and differing terminology between the two disciplines. Each of these struggles have been highlighted in the literature as barriers to IPE and IPC. As a reminder, the collaborative relationship between pre-SLPs and psychologists during YETI developed over the course of one week. Bridges et al. (2011) highlighted that collaborative relationships develop over time, as do understanding boundaries and team member roles.
Participants were not afforded the time it takes to appropriately develop a collaborative relationship, as a result the expressed struggles are not a surprise to the researcher. A difficulty with the collaborative relationship can be summarized by Kathleen (pre-SLP) in her time two interview:

*I expected it to be more like breaking down those silos and like teach me about what you’re doing and I’ll teach you about what I’m doing and it just really never felt like I got into their world or they wanted to come into mine.*

**Systematic barriers to IPE**

An increasing number of professional organizations are moving toward integrating collaborative practices into their ethics and mission statements (ASHA Code of Ethics, 2016; NASP Code of Ethics, 2010), yet IPE at the university level is still minimal. Barriers to IPE at the university level include logistical challenges such as course design, timetable restrictions (i.e. bringing students from different disciplines together at the same time), differences in clinic schedules, and large student cohorts (Urbina et al., 1997). Faculty support and attitudes toward IPE and financial constraints (i.e. program funding) are stated as additional limiting factors.

At the University of Montana, these barriers exist. Course design and differences in academic clinical schedules have the potential to negatively impact the implementation of IPE programs. As an example, speech-language pathology graduate students are required to take a three-week intensive autism course prior to starting training for YETI. Psychology students do not have the same requirement due to differences in program requirements. A three-week intensive course could be an opportunity to provide an interprofessional education curriculum for pre-SLPs and psychologists prior to beginning YETI training. Whether these restrictions are at the system or program level is beyond the scope of the current study.
Implication for clinical practice

Currently, YETI is considered an interprofessional collaboration (IPC) program. While pre-service professionals have the opportunity to collaborate (learning from and with one another), there is not an explicit interprofessional education (IPE) component to the training (learning from, with, AND about one another). Pre-service professionals are not taught about the other professional’s scope of practice. Roles and responsibilities within a social skills intervention are not directly instructed, with the exception of understanding that SLPs teach language-based lessons and psychologists manage behavior and teach the social-emotional lessons. Pre-service professionals learn about the other professional’s roles and responsibilities during the YETI intervention, but that knowledge is not generalized to how it could apply to SLPs and psychologists working together in the workplace. In order to enhance the program, YETI would benefit from an interprofessional education component to the training, as well as explicit instruction on roles, responsibilities, and expectations of each pre-service professional who is participating as a clinician.

Limitations and Future Research

The results of the current study have contributed to the literature base on successful interprofessional collaboration (IPC) programs at the university level. Through this process, pre-service professionals identified benefits and struggles to working as part of an interprofessional team during graduate school. Nonetheless, there are limitations to the study to be discussed and future research ideas to be presented.

First, the number of pre-service Speech-Language Pathologists (pre-SLPS) and pre-service Psychologists (pre-Psycs) who participated in the current study were unbalanced. Because two of the five pre-Psycs declined to participate in this research study, the participants
were comprised of seven pre-SLPs and three pre-Psycs. Gathering perspectives from an equal number of pre-SLPs and pre-Psycs will provide a balance in the interpretation of results and provide further support for the results.

An additional limitation was the diverse education levels of the participants. One participant was a senior in his undergraduate program, while two participants were in the third year of their doctoral programs. These variances speak to potential differences perspectives and experiences of the participants. In contrast, some participants had IPC experiences prior to the YETI program, while others did not. Education level and prior IPC experiences were not accounted for in the current study. It is possible that previous academic classes, clinical experiences, and IPC experiences influenced participants attitudes toward the other pre-service professional.

In addition, the first author was both a leader and a peer during the YETI program. While this is considered a strength of the study, it is also a limitation. The data collected during the interviews may have been influenced by the participants having a professional relationship with the first author.

Lastly, future research could focus on the effectiveness and outcomes associated with implementing an interprofessional education curriculum during YETI, either during the autism course prior to the intervention or the six-hour training all student clinicians participating in YETI must complete. Research examining the effectiveness of implementing an IPE curriculum during the YETI program and the outcomes for the student clinicians could further strengthen the YETI program and contribute to the literature-based on successful interprofessional education programs at the university level.
References


SLP AND PSYCH STUDENTS’ PERCEPTIONS OF AN INTERPROFESSIONAL AUTISM INTERVENTION


SLP AND PSYCH STUDENTS’ PERCEPTIONS OF AN INTERPROFESSIONAL AUTISM INTERVENTION


Appendix A- Informed Consent

PARTICIPANT INFORMATION AND INFORMED CONSENT

Study Title: Speech-Language Pathology and Psychology Students’ Perceptions of an Interprofessional Autism Intervention: A Qualitative Study

Investigator(s):
- Haley Nelson, Student, Curry Health 021, (406) 243-2626
- Ginger Collins, Curry Health 021, (406) 243-2626
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Special Instructions:
This consent form may contain words that are new to you. If you read any words that are not clear to you, please ask the person who gave you this form to explain them to you.

Inclusion Criteria:
- You must be an undergraduate, post-baccalaureate, or graduate student in Communicative Sciences and Disorders (CSD) or Psychology program at the University of Montana.
- You must be a student clinician working in a 1:1 direct service role in the Youth Engagement Through Intervention (YETI) summer intensive program during the summer of 2018.

Purpose:
You are being asked to take part in a research study exploring your experience, as a student clinician, throughout an intensive autism intervention.

The results will be used for my masters’ thesis project and potentially for publications in academic journals.

You must be 18 or older to participate in this research.

Procedures:
If you agree to take part in this research study, you will be sent an online survey containing demographic questions. The survey will take approximately five minutes. Further, you will be required to take part in three interviews. The first will take place prior to YETI and will last approximately 10 minutes. The second will occur immediately following YETI and will last approximately 10 minutes. The final interview will occur two-months following YETI will last approximately 20 minutes. The interviews will be conducted either in the CSD department or via a web-based conference software, such as Zoom.
Additionally, morning and evening group meetings (between student clinicians and supervisors) will be audio recorded. When reviewing the recordings of these meetings, your identity will be kept anonymous.

**Payment for Participation:**
There is no payment offered for participation in this study.

**Risks/Discomforts:**
There is no anticipated discomfort for those contributing to this study, so risk to participants is minimal. Mild discomfort may result from reflection or explanation of experiences as a clinician in YETI and/or collaborative experiences with other clinicians. Answering the questions may cause you to think about feelings that make you sad or upset. If you are too uncomfortable to continue, you may discontinue your participation at any time.

**Benefits:**
Although you may not directly benefit from taking part in this study, the results may impact how preservice interprofessional education is delivered in a university setting.

**Confidentiality:**
*Confidentiality means the researcher will maintain records with personal identifiers but will not release information to unauthorized personnel. Anonymity means that records will not include any personal identifiers or code numbers that may link a participant to specific information.*

Your records will be kept confidential and will not be released without your consent except as required by law. If you choose, your identity will be kept private. If the results of this study are written in a scientific journal or presented at a scientific meeting, your name will not be used. The data will be stored in a locked file cabinet or a password protected computer file. Your signed consent form will be stored in a cabinet separate from the data. If you choose to keep your identity confidential, the videotape and/or audiotape will be transcribed without any information that could identify you and a pseudonym will be used in place of your name. Once transcribed, the recording will be erased/destroyed.

Do you wish to have your identity kept anonymous?

_______ YES

_______ NO

**Voluntary Participation/Withdrawal:**
Your decision to take part in this research study is entirely voluntary. You may refuse to take part in or you may withdraw from the study at any time without penalty or loss of benefits to which you are normally entitled. You may leave the study for any reason. You may be asked to leave the study for any of the following reasons:

1. Failure to follow the Project Director’s instructions;
2. Not enrolled in a CSD or Psychology program as an undergraduate, graduate or doctoral student.
3. Not participating as a student clinician in the Summer YETI intensive program.
4. The Project Director thinks it is in the best interest of your health and welfare; or
5. The study is terminated.

Questions:
If you have any questions about the research now or during the study, please contact: Haley Nelson at (509) 844-2211.

If you have any questions regarding your rights as a research subject, you may contact the UM Institutional Review Board (IRB) at (406) 243-6672.

Statement of Your Consent:
I have read the above description of this research study. I have been informed of the risks and benefits involved, and all my questions have been answered to my satisfaction. Furthermore, I have been assured that any future questions I may have will also be answered by a member of the research team. I voluntarily agree to take part in this study. I understand I will receive a copy of this consent form.

________________________
Printed Name of Participant

________________________
Participant's Signature                           Date

Statement of Consent to be Videotaped and/or Audiotaped:
I understand that audio/video recordings may be taken during the study. I understand that audio recordings will be destroyed following transcription, and that no identifying information will be included in the transcription.

Select the statement that describes the consent you wish to provide:

- I consent to be video-audio recorded during group meetings and interviewed.
- I consent to be video-audio recorded during group meetings ONLY.
- I do not consent to be recorded or interviewed.

________________________
Participant's Signature                           Date
Appendix B - Statement of Confidentiality

THE UNIVERSITY OF MONTANA-MISSOULA
Institutional Review Board (IRB)
for the Protection of Human Subjects in Research

ONLINE SURVEY
(SurveyMonkey, Select Survey, Qualtrics, etc.)

Statement of Confidentiality

When developing the online survey instrument for my project, “Speech-Language Pathology and Psychology Students’ Perceptions of an Interprofessional Autism Intervention: A Qualitative Study,” my signature below certifies that:

1) I will design my online survey so that the front page of the instrument includes the project description, a risk/benefit statement, and contact information for questions. Participants will not be forced to respond to a question before being able to move on to the next question. Participation will be clearly voluntary, and subjects’ consent will be affirmatively indicated by clicking a box (or marking an X) in order to proceed into the survey; and,

2) If my survey is anonymous,
   a. I will provide the URL link to the survey via a hand-out, or in the body of an email, but will **not** send it electronically through a feature of the survey software; and
   b. I will **not** include any potentially identifiable technical data (e.g., IP addresses) in my collection configuration. If, however, I am unable to deselect and technical data is captured by default, I, as the instrument designer, will destroy it immediately. As a result, I will be the only one (of my research team, if applicable) to see this data, and it will not be used in any way.

Internet surveys are considered anonymous only if no identifying information is collected and no IP addresses are obtained.

The highest form of online security available utilizes Secure Sockets Layer (SSL) or Transport Layer Security (TLS) and ensures data is transmitted in an encrypted fashion. Select Survey does not use SSL or TLS and for some survey software (e.g. SurveyMonkey), this security is available only via purchase.

The survey software I am using is **Qualtrics**

It utilizes SSL or TLS: **X** Yes   ____ No
SLP AND PSYCH STUDENTS’ PERCEPTIONS OF AN INTERPROFESSIONAL AUTISM INTERVENTION

Haley Marie Nelson 05/02/2018
Signature of Principal Investigator (type for email submission; sign for hard copy) Date

I AM AWARE that electronic submission of this form from my University email account constitutes my signature.
Appendix C- Demographic Information for all Participants (survey)

These questions were sent to all participants prior to the semi-structured interviews via an online Qualtrics survey.

1. Please state your current academic program.
2. Please state the degree you are currently pursuing (bachelor’s, master’s, doctoral, or non-degree seeking post-baccalaureate)
3. Please state your current standing in your program (for example, “junior,” “first year graduate student”).
4. List any degrees you have earned as of May 12, 2018. (e.g. Bachelor of Arts in Early Childhood Education, or Master of Science in Clinical Psychology)
5. If you have every worked in a medical, educational, or mental health setting, please describe (very briefly) your role and place of employment here.
6. Briefly list occasions when you have worked with people from another field.
   a. Academic-based (e.g. YETI, MOSSAIC, social work or pharmacy consult, IEP meeting)
   b. Professional-based (e.g. SLP-A, pre-school teacher)
7. Have you ever worked with, or had a relationship with, an individual with autism?
   a. Was the individual with autism a Child or adult?
   b. What was your role or relationship?
8. If you have had any training in behavioral intervention, please briefly describe that training here.
9. If you have had any training in language intervention, please briefly describe that training here.
10. Briefly list or describe any evidence-based ASD intervention practices with which you are familiar.
Appendix D – Interview Questions

Pre-Intervention Interview Questions for Pre-service Speech-Language Pathologists (SLPs)

1. You are studying to be a speech-language pathologist. Describe what a school-based speech-language pathologist does.

2. During YETI you will be working with student clinicians from school and clinical psychology. In your own words, describe what a school-based psychologist does.

3. What do you think about the experience of working with preservice psychologists during YETI?
   - Do you anticipate any benefits from working with them?
   - Do you anticipate any struggles in working with them?

Pre-Intervention Interview Questions for Pre-Service Psychologists

1. You are studying to be a psychologist. Describe what a school-based psychologist does.

2. During YETI you will be working with student clinicians from speech-language pathology. In your own words, describe what a school-based speech-language pathologist does.

3. What do you think about the experience of working with preservice speech-language pathologists during YETI?
   - Do you anticipate any benefits from working with them?
   - Do you anticipate any struggles in working with them?

Post Intervention Interview Questions for Pre-Service SLPs

1. In your own words, describe what a school-based speech-language pathologist does.

2. In your own words, describe what a school-based psychologist does.

3. What did you think about the experience of working with preservice psychologists during YETI?
   - Did you experience any benefits from working with them?
   - Did you experience any struggles in working with them?

Post Intervention Interview Questions for Pre-Service Psychologists

1. In your own words, describe what a school-based psychologist does.
2. In your own words, describe what a school-based speech-language pathologist does.

3. What did you think about the experience of working with preservice speech-language pathologists during YETI?
   a. Did you experience any benefits from working with them?
   b. Did you experience any struggles in working with them?

2-Month Follow-Up Interview Questions for Pre-Service SLPs

1. Please reflect on your YETI experience.

2. What are your biggest take-aways from working as a student clinician in YETI.
   o What about working with students from another department?
   o How has your knowledge of autism intervention and confidence in implementation of evidence-based practices changed?

3. You were required to take an autism course prior to YETI.
   o What aspects of the class were beneficial?
   o Were there any other previous experiences that assisted you during YETI

4. Tell me about the experience of co-teaching.
   o How did you decide who took on what roles?

5. How would you describe your change in perception, if any, of psychologists at the beginning of YETI versus at the end of YETI?

2-Month Follow-Up Interview Questions for Pre-Service Psychologists

1. Please reflect on your YETI experience.

2. What are your biggest take-aways from working as a student clinician in YETI.
   o What about working with students from another department?
   o How has your knowledge of autism intervention and confidence in implementation of evidence-based practices changed?

3. What practical experiences benefited you most through the practicum experience of YETI?

4. Tell me about the experience of co-teaching.
   o How did you decide who took on what roles?
5. How would you describe your change in perception, if any, of SLPs at the beginning of YETI versus at the end of YETI?