A Collaborative Approach in Education through Interprofessional Education (IPE) and Practices (IPP) of Classroom Teachers and Speech-Language Pathologists to Develop Professional Identity, Communication Skills, and Goal Sharing

Avery Smith

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A Collaborative Approach in Education through Interprofessional Education (IPE) and Practices (IPP) of Classroom Teachers and Speech-Language Pathologists to Develop Professional Identity, Communication Skills, and Goal Sharing

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In fulfillment of COEHP Honors Research Study
University of Arkansas COEHP Honors Student
Communication Sciences and Disorders
University of Arkansas
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A Collaborative Approach to Education through Interpersonal Education (IPE) and Practices (IPP) of Classroom Teachers and Speech Language Pathologists to Develop Professional Identity, Communication Skills and Goal Sharing

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INTRODUCTION

Interprofessional Education (IPE) and Practices (IPP) have taken flight in healthcare systems; however, this approach has yet to be utilized across school settings. Collaboration among educational professionals is crucial for advancing the well-being and academic environment of both professionals and students (Wilson, McNell, & Gillam, 2016). There has been an increasing interest in the collaboration between the SLP and classroom teachers. This growing attention may have stemmed from academic ideals such as learning theory, functional goal-setting, inclusive educational philosophies, instructional methods, and response to intervention (Archibald, 2017). With general classroom rigor levels rising and discourse from the public, SLPs have a unique opportunity to collaborate with teachers to share linguistic expertise for implementing best practices in the classroom (Powell, 2018). In a study aimed to explore perceptions of IPP experiences, participants addressed the phrase “in any team, it is essential that each member of the team respect and acknowledge the contributions of their teammates and work together to accomplish the common goal, in this case, being a patient advocate and providing the best care” (Matelitches, 2020, p. 4). IPP and IPE may set as a solution to the need for supporting student learning.

PURPOSE

Research Question: “What are the relational and academic effects between an educator and a SLP that follow a plan on teaching professional identity, communication skills, and goal sharing?”

This research study aimed to identify the role that IPE and IPP have on the relationship between the SLP and classroom teacher and how that partnership promotes academic growth. The plan aimed to shift the traditional mindset of the SLP as a supplemental resource to that of a partnership approach for meeting the needs of students.

RESEARCH DESIGN/METHODS

The intervention took place three times each week, two hours per day, for a total of ten weeks. It included two participant pairings of the SLP partnering with a kindergarten teacher and a first-grade teacher. Professional participants completed a 5-point Likert scale pre-survey to establish baseline data about current mindsets on IPP and IPE and a post-survey upon completion. Identical students were administered a pre-assessment and post-assessment. The Kindergarten Daily Language Warm-Up was utilized to provide a measure of growth in morphological awareness. The Phonological Awareness Screening Test (FAST) was administered in first-grade to evaluate aspects of phonological awareness. Results guided the pairings in planning effective instruction. Anecdotal data was collected to determine patterns and trends. Weekly and monthly meetings encompassed collaborative discussions about best practices, identified goals, and development of a therapy register. The intervention took place through practice of the inclusive model of instruction including interdisciplinary pairings.

RESULTS

Raw scores from the 5-point Likert-type surveys were converted to standard scores. The results for the SLP on the pre-survey (69) and the post-survey (73) when compared showed improvement in professional perceptions of IPE and IPP. Results for the kindergarten teacher showed no gains when comparing the pre-survey (64) and post-survey (64); however, the first-grade teacher pre-survey (63) and post-survey (71.4) show gains. The results of student pre-assessments were compared and analyzed with the post-assessment using a paired-samples t-test at a 0.05 level of alpha. No gains were shown for identified kindergarten students in morphological awareness; however, the analysis for the identified first-grade students showed a statistically significant difference in their understanding of (morphological) awareness from the beginning of the intervention to completion, which determined that the intervention was effective for this group of participants.

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REFERENCES


Abstract

The purpose of this study was to examine the effects of Interprofessional Education (IPE) and Interprofessional Practices (IPP) between classroom teachers and speech-language pathologists to further develop professional identity, enhance communication skills, and bolster collaborative goal sharing. The study aimed to establish interprofessional relationships between participants, which included two classroom teachers and a speech-language pathologist, as well as determine the effects that the interprofessional practices have on identified students in kindergarten and first-grade achievement. The speech-language pathologist and the classroom teachers were given a survey at the beginning and end of the intervention to gain qualified information providing an understanding of their perception and attitude toward IPE and IPP. One group of identified kindergarten students completed a teacher-created assessment monitoring the development of morphological awareness. Another group of identified first-grade students were given the *Phonological Awareness Screening Test (PAST)* to access phonological awareness. Each group was given a pre-assessment to determine baseline data and a post-assessment at the end of intervention. The intervention took place over the span of eight weeks, three times per week, for one hour each day. An additional hour each month was dedicated to structured meetings with the professional participants. The intervention consisted of incorporating an inclusive instructional model for identified students in the classroom setting in which the classroom teachers and the speech-language pathologist implemented interprofessional practices in a co-teaching model for meeting the needs of the identified students. The results reflect improvement of perceptions for all professionals. Analysis of first-grade data show a positive correlation for the use of IPE and IPP. Anecdotal data show themes of collaboration for goal setting to determine instructional needs and the development of professional identity.
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Chapter I

Introduction

Purpose of the Study

The purpose of this study was to investigate the effects of Interprofessional Education (IPE) and Interprofessional Practices (IPP) on the development of professional relationships, and to determine if this strategy had an impact on the achievement of identified students. By implementing a collaborative dynamic through the use of goal sharing and joint meetings, the researcher investigated the impact of increasing direct contact and frequent communication between the school classroom teachers and speech-language pathologist for developing professional identity, as well as goal setting, on the academic growth of identified students.

Background of the Problem

Interprofessional collaboration is essential to the provision of effective treatment and care for individuals with disabilities. Through the facilitation of interprofessional practices, overall instruction and academic aid is enhanced. The idea of IPP has taken flight in the healthcare systems through collaboration between doctors, nurses, and therapists. However, this approach to treatment has yet to be effectively utilized across professions in the school systems. The need for school-based IPE and IPP is prevalent in the way that these professions care for and communicate about instructional goals for students who require accommodations. Collaboration among the educational professionals, speech-language pathologists (SLP) and classroom teachers is considered a crucial way to advance the academic environment of professionals and for meeting the needs of students. (Wilson, McNeill, & Gillon, 2016). However, there seems to be minimal research or evidence of SLPs and classroom teachers engaging in IPP or IPE, leaving this to be a relatively unexplored area of study. Recently, there has been an increasing interest in
the collaboration between the SLP and classroom teachers. This growing attention may have stemmed from current academic ideals such as learning theory, functional goal-setting, inclusive educational philosophies, instructional methods, and response to intervention (Archibald, 2017). This interest is aligned with the idea that interprofessional education and practices may be the solution for a much needed approach to personalized and differentiated instruction. With general classroom rigor levels rising and discernment from the public, SLPs have a unique opportunity to collaborate with teachers and share linguistic expertise to implement best practices in the classroom (Powell, 2018). In a study aimed to explore perceptions of IPP experiences, Matulewicz (2020) explores the five domains achieved through IPP: interprofessional attitudes, communication, collaborative behaviors, professional identity, and systems of care. Each of these domains encompasses subdomains for further exploration and study. Participants in Matulewicz’s study recognized the need for understanding different perspectives, roles, and responsibilities when working as a team to provide the best instruction. This study addressed that “as with any team, it is essential that each member of the team respect and acknowledge the contributions of their teammates and work together to accomplish the common goal, in this case, being a patient advocate and providing the best care.” (Matulewicz, 2020, p. 4).

Definition of Terms

The following terms are defined in order to facilitate the understanding of this study:

1. **Interprofessional Education and Interprofessional Practices** are defined as involving “educators and learners from two or more health professions who jointly create and foster a collaborative learning environment based on the expertise of their foundational disciplines. The goal of these efforts is to develop knowledge, skills and attitudes that result in interprofessional team behaviors and competence” (Buring et al., 2009).
2. *Morpheme* is defined as the smallest unit of language that has its own meaning, being either a word or a part of a word (Cambridge English Dictionary, 2022).

3. *Phonological awareness* is defined as the ability to recognize and manipulate the spoken parts of words. The levels of phonological awareness are, from simplest to most complex: syllables, onset–rime, and phonemes. (Reading Rockets, 2022).

**Significance of the Study and Primary Research Question**

This study was designed to examine the effect that IPE and IPP may have on the professional development of two classroom teachers, a speech-language pathologist, as well as the phonological and morphological growth of identified students in kindergarten and first-grade. If this study proves to further develop professional relationships and improve the language skills of the identified student groups, others may choose to implement this strategy. The following research question was addressed, “What are the effects of a collaborative approach in education through Interprofessional Education (IPE) and Interprofessional Practices (IPP) of classroom teachers and speech-language pathologists to develop professional identity, communication skills, and goal sharing?”

**Summary**

This study has been separated into five sections. Chapter I has offered a statement of introduction and explanation of this study. Chapter II will provide a review of literature concerning Interprofessional Education (IPE), Interprofessional Practices (IPP), and the integrated model of instruction and professional collaboration in the classroom setting. Chapter III will explain the methodology for the research study within which the setting, participants, data collection methods, instruments used, and the design for analysis. Chapter IV will discuss the results of the study. The baseline data, intervention methods, pre-assessments,
This section has given a brief overview of the research study, specifically in how Interprofessional Education (IPE) and Interprofessional Practices (IPP) may bolster professional development and academic growth. The next section will review relevant literature regarding IPE and IPP in an integrated instruction model within a classroom setting.
Chapter II

Review of Relevant Literature

Introduction

This section provides a review of the relevant literature relating to Interprofessional Education (IPE) and Interprofessional Practices (IPP), professional collaboration, and the integrated classroom instruction model. First, developmental characteristics of kindergarten and first-graders and their varying needs will be described. Next, support for IPE will be detailed showing the need and benefit of IPP in the classroom. An overview of relevant literature will be provided and one strategy, in particular, that may have a great impact, the integrated classroom instruction model. This review will be organized into five sections including the developmental milestones of kindergarten and first-grade students, challenges of diverse learners in today’s classroom setting, the rationale for the study, leading relevant research, and interventions that may be of benefit for identified students.

Developmental Milestones of Kindergarten and First-Grade Students

When students reach the age of five, they experience one of the largest transitions of their life up to that point, they begin the journey of education. These students attending school for the first time have a literal perception of their environment, unfamiliarity with school systems, and a reliance on the adults for guidance (Wilson, 2011). These truths further prove that these young individuals have a vast need for teachers, and supporting staff to enrich their learning environment and skill development. Students at this age benefit most from activities that are concrete, interactive, and give clear direction (Wilson, 2011). Kindergarten and first-graders thrive on routine and repetition. They find comfort in the familiarity of knowing what to expect, and are able to get excited about what they know is coming. It is most effective to utilize this
Knowing the uniqueness of this age group better helps teachers and school staff in their ability to work alongside them and bolster their academic, social and emotional growth in the most effective way possible.

Growth milestones for individuals in the five to seven year range relates to the physical activity of children at this age. They are quick learners and their bodies are growing rapidly, allowing them new freedoms daily. It is important to keep in mind that these individuals may have a hard time staying focused and sitting still for extended periods of time. According to author Amanda Morin and the *Understood* organization, socially and behaviorally, individuals at this age desire to please. They are likely to want to follow rules and may even ridicule peers who are abiding by the norms (2022). They seek approval, may get upset and express signs of frustration if they feel they are not being listened to or taken seriously. These individuals are experiencing many social firsts. They are independently developing friendships, experiencing peer inclusion and peer exclusion, jealousy, and social freedom apart from their parents. According to language and cognition, kindergartners have been described as creative thinkers who love engaging in the learning process (Morin, 2022). They are beginning to grasp academic concepts and are being introduced to new words and ideas daily. By this age, most kindergarten and first-graders are able to recognize letter and number symbols, use plurals and pronouns, follow multi-step directions, and understand comparison between objects. Kids at this age love to tell stories and share information about themselves (Morin, 2022). It is important to have a clear understanding of this age group in order to best utilize strategies to further their academic success in the classroom.
Challenges of Diverse Learners in Today’s Classroom

Skills for phonological and morphological awareness are crucial, as they are foundational for individuals learning to read, interactions with society, acquiring knowledge, and interpreting language as a whole. According to speech-language pathologist, Dr. Barton-Hulsey, there are several challenges within reading instruction that inherently exist for individuals who struggle with speech and language development (2017). This author states that “more than 15% of children in the United States have one or more developmental disabilities that impact their reading development” (Barton-Hulsey, 2017, para. 2). The key to supporting these individuals' reading development is through phonological and morphological awareness. These language domains encompass the “explicit knowledge of the sound structure of a language and the ability to manipulate those sounds” (Barton-Hulsey, 2017, para. 6). Children need these foundational skills of rhyming, segmenting, and letter relationships in order to learn to read. Barton-Hulsey asserts that for individuals who experience developmental disabilities, approaches that consist of a phonological core component, in addition to instruction in language comprehension, yielded the most successful reading outcomes (2017). This determination shows the vitality of introducing phonological components in regard to reading and word acquisition. The greatest challenge for the classroom teacher and speech-language pathologist is the cycle of instruction and assessment related to the uniqueness of each individual. There is no one lesson that fits every student’s needs. For a classroom teacher, the difficulty lies in the inability to spend intentional one-on-one time meeting with each student and individualizing the lesson plan for that student’s specific need. Learning to read is a complex language skill that is made more challenging through the learning of phonological and morphological skills, which are necessary components for literacy success.
Rationale for the Study

Current research has focused on ways to improve academic challenges in today’s classrooms and the need to shift approaches to teaching and learning. More emphasis must be placed on addressing the needs of students by considering action plans that provide support for teachers who are frustrated and leaving the field early in their career. This summary addresses the need for a collaborative approach in education through Interprofessional Education (IPE) and Practices (IPP) in school-based settings. “Interprofessional collaboration occurs when two or more professions work together to achieve common goals and is often used as a means for solving a variety of problems and complex issues. The benefits of collaboration allow participants to achieve together more than they can individually, serve larger groups of people, and grow on individual and organizational levels” (Green & Johnson, 2015, p.10). IPE and IPP are commonly seen in medical sciences education, yet not in the field of education. This model can be effective in supporting classroom teachers to analyze challenges that impede personal and academic achievement of all students in the classroom. Teachers need and deserve guidance, expertise, and support of multiple professionals who can offer new insights to help them broaden their approach (Reeves, 2016).

School-based speech-language pathologists (SLPs) frequently engage in collaborative services known as IPE, to support educators in meeting the needs of students and collaborate on strategies of best practice. A partnership model can advance both the educational environment and well-being of students and these professionals. Research shows that students with educational disabilities are more likely to receive appropriate intervention and quality care when a qualified team is establishing academic and goals for communication (Bauer, 2010). In importance to the collaboration of these two professions, teachers and SLPs have unique, but
complementary knowledge that lays the foundation for a successful partnership (Archibald, 2017). Bauer (2010) describes the challenges in creating this professional partnership, such as time constraints, scheduling difficulties, and other faculty duties.

**Leading Relevant Research**

The use of Interprofessional Education had rarely been studied in the school based setting until researchers Wilson, McNeill, and Gillon studied the relationship between classroom teachers and speech-language pathologist through entry level students in their graduate placements. These researchers knew that “workshop-based applications are beneficial in preparing participants for elements of collaborative practice” (Wilson et al., 2016), but they wanted to explore the idea of experiential IPE and the effects that it would have on these young professionals and the students they serve. The researchers created this alternate avenue for the varying professionals to potentially develop attitudes, knowledge, and skills for interprofessional collaboration. The study aimed to gain an understanding of how the student speech-language pathologist and teachers (SLTs) would develop collaborative practices through co-working during shared placements to facilitate children’s literature development. The study included four speech-language pathologists and teacher pairs that worked alongside each other. In order to monitor the collaboration, the researchers conducted interview and survey analysis to track their interdisciplinary knowledge changes. The researchers concluded that “Shared placement experiences between student SLTs and student teachers may be an effective method for building participants’ competencies in multiple aspects of collaborative practice” (Wilson et al., 2016). Utilizing this relationship development in the classroom structure will optimize student’s growth in the classroom.
Integrated Classroom Model

Collaboration among professionals is deemed as best practice in fields that serve individuals with special needs. Integrated classroom instruction models, or push-in therapy, is the, “the provision of therapeutic intervention in the context of the classroom setting. This is in contrast to the more traditional model of intervention, commonly called pull-out therapy, where the therapist removes the child from the classroom and provides intervention in an isolated setting absent of other children” (Hernandez, 2012, p. 48). Collaboration as a concept is defined as, “a style for direct interaction between at least two co-equal partners voluntarily engaged in shared decision making as they work toward a common goal”(Hernandez, 2012, p. 48). Successful collaboration has the ability to enhance both educational and therapeutic services provided to students when “alternate modes of therapeutic interventions, such as push-in therapy, are provided to students in the classroom setting”(Hernandez, 2012, p. 48). A research study was conducted to evaluate whether push-in/integrated or pull-out models of instruction are more beneficial for students with language disorders. The research study concluded that the, “use of the push-in/pull-out criteria was helpful when it came to determining whether a student should be provided speech therapy services in isolation or in the presence of other students in the contextual setting of the classroom”(Hernandez, 2012, p. 47). The implication of this conclusion supports that providing integrated classroom instruction may be a way to analyze if a student with language delays needs to be referred for further speech therapy services, or if supplemental targeted instruction provided in the classroom is sufficient support for their language development. Finding success in this may result in easing the caseloads of speech-language pathologists working in schools, and the ability
to target a higher number of students through the professional integration. The study also concluded that the integrated classroom instruction model was beneficial to the targeted students, and aided in the “collaborative effort between the two professionals” (Hernandez, 2012, p. 48). The findings of this research study that focused on the integrated classroom instruction model provide support for the implementation of IPE through classroom integrated instruction.

Summary

Phonology and morphology are key components to speech, language, and literacy development. Learning the segmentation and manipulation of sounds is essential to students for success in their reading. Interprofessional education between a classroom teacher and speech-language pathologist aids in mitigating the challenge of varying student needs by providing expertise in these areas of language development and the ability to intentionally target students with language disabilities and delays. The next chapter will describe the methodology for implementing the present study.
Chapter III

Methodology

Introduction

This study investigated the effects of Interprofessional Education (IPE) and Interprofessional Practices (IPP) between classroom teachers and speech-language pathologists to further develop professional identity, enhance communication skills, and bolster collaborative goal sharing. The study was intended to be of benefit to the speech-language pathologist, classroom teachers, and the targeted kindergarten and first-grade students who struggled in the areas of speech and language development. This chapter will describe the setting of the study, the participants, and the process that was used. An explanation of how baseline data was collected and the assessment procedures used will be described. The intervention strategy will be explained along with methods for analyzing the data gathered.

District and School Setting

This section will provide the demographic information of the district and school setting in which the study took place. This specific study was done with a group of students that all attend the same school in Northwest Arkansas.

District Setting. The study took place at an elementary school in Northwest Arkansas. Demographic information provided in this section is based on the 2021-2022 school year (Arkansas Department of Elementary and Secondary Education, [DESE], 2021). The school district serves students from pre-kindergarten through twelfth grade. The district in which the school is located has 10,349 students in 16 schools.

Within the district there are 3,919 students who meet the federal guidelines of
poverty. The student population consists of 6,669 White students, 1,291 Hispanic students, 155 Native Hawaiian or Pacific Islander students, 268 Asian students, 1,068 Black students, 39 Native American or North Alaskan students, and 859 students of Two or More Races (see Figure 1). Figure 1 illustrates the racial demographics for the school district in which the intervention was conducted.

![Racial Demographics of School District](image)

**Figure 1.** Racial Demographics for the School District in Northwest Arkansas.

**School Setting.** The elementary school where this study took place has a total population of 641 students. Of the total number of students in the school, 192 meet the federal guidelines of poverty. The population consists of 427 White students, 55 Black students, 85 Hispanic students, 21 Asian students, 6 Pacific Islander students, and 47 students of Two or More races. Figure 2 illustrates the racial demographics for the elementary school in which the intervention was conducted.
Participants. The professional participants included two classroom teachers and one speech-language pathologist. All three professional participants were female and White. There were three kindergarten student participants: two females and one male. Of these three, one student was Black, one student was Asian, and one student was Indian. There were five first-grade participants: two were female and three were male. Of these five, four were White and one was Black.

Confidentiality

Permission to conduct the study was granted by the University of Arkansas Institutional Review Board (see Appendix A), as well as the administration of the school where the study was conducted (see Appendix B). Permission to participate in the study was obtained prior to the commencement of this project. An informational letter (see Appendix C), along with an letter of Informed Consent (see Appendix D), was sent home with each student and a signature from the parent or guardian was required before data for that child was reported. The Informed Consent explains the purposes and procedures of the study. It also explains participation is completely voluntary and that there is no reward or penalty for participating. It further explains the child may withdraw from the study at any time without penalty. Confidentiality was maintained to the
extent allowed by State and Federal law and University policy and assured by the researcher through the establishment of a code. All data was recorded anonymously using this code. Only the researcher had access to the code and all data were kept in a locked file cabinet. Once the study is defended, the code will be destroyed.

Data Collection Methods

This section provides descriptions of the evaluation instruments used throughout the study as pre-assessment and post-assessment, baseline methods, formative assessments, other data collection methods, and post-data analysis.

*Five Point Likert Scale Survey.* The speech-language pathologist and both of the classroom teachers were given a survey in order to evaluate their understanding of interprofessional education both before the intervention began and at the end of intervention (see Appendix E1, E2). The survey included questions pertaining to their current perception and attitude toward Interprofessional Education (IPE) and Interprofessional Practices (IPP), as well as their current experience with or exposure to collaborative practices with one another. The survey was a self-administered, individual survey in electronic form. The entire survey can be completed in approximately ten minutes. The researchers analyzed the scores after all of the individuals had completed the survey. The survey was repeated at the end of the intervention and the differences in professional perception were analyzed to determine the effects of the interprofessional approach utilizing the integrated model in the classroom.

*Kindergarten Daily Language Warm-Up.* The kindergarten students were given the *Kindergarten Daily Language Warm-Up (KDLWU)* in order to determine their morphological competence both before and after the intervention (see Appendix E4). The Kindergarten Daily Language Warm-Up is an informal, unstandardized, individual assessment that is administered to
students in paper form assessing skills utilized in kindergarten. The entire test can be administered in five to ten minutes. The researcher compiled the scores from the Kindergarten Daily Language Warm-Up assessment after all students were accessed. The Kindergarten Daily Language Warm-Up was repeated at the end of the intervention in order to evaluate the differences in student achievement, determining the effects of the interprofessional approach utilizing the integrated instruction model in the classroom during the scheduled language time.

**Phonological Awareness Screening Test.** The first-grade students were given the Phonological Awareness Screening Test (PAST) in order to evaluate their understanding of the varying aspects of phonological awareness both before the intervention began and at the end of intervention (see Appendix E3). The Phonological Awareness Screening Test (PAST) is an informal, individual assessment that is administered to students in paper form for assessing phonological components intended for use in a first-grade classroom. This entire test can be administered individually in approximately 10-15 minutes. The researcher compiled the scores from the Phonological Awareness Screening Test after all students were assessed. The PAST was repeated at the end of the intervention and the differences in student achievement were analyzed to determine the effects of the interprofessional approach utilizing the integrated instruction model in the classroom during phonics.

**Baseline Methods.** In order to establish baseline data for the professionals' perceptions on interprofessional education, a pre-survey and post-survey were conducted. Both classroom teachers, as well as the speech-language pathologist, were administered using a 5 point Likert scale survey to qualify their current perception of IPE and IPP. The survey gave a current report of their exposure to collaboration and IPE. In order to establish baseline data for students’ phonological and morphological development each student was assessed. The kindergartners
were assessed using the *Kindergarten Daily Language Warm-Up* assessment. The first-grade students were assessed using the *Phonological Awareness Screening Test (PAST)*. This assessment provides professionals with a method for assessing a student’s current phonological awareness level. The assessment discerns the ability to differentiate the sounds of the language, both in listening and speaking. The *PAST* evaluates phonological awareness at different levels including syllable level, onset-rhyme level, and phoneme level. At each level, the students are given a word and then told to repeat the word leaving off a certain component dependent on the level being assessed.

**Other data collection methods.** The following data collection methods were also used and are described.

*Anecdotal records.* Data were collected during the intervention period to monitor and record the development of professional identity and relationships established through the collaborative practices. Data was also collected to monitor and record student progress related to phonological and morphological awareness. Data were collected by recording observed anecdotes related to the use of Interprofessional Education and the integrated instruction model of collaboration in the classrooms. Both professionals and students were observed three times per week to determine their use of Interprofessional Education as a tool to develop their professional identity and how it affects the students' learning in the classroom.

**Post Data Analysis.** The professionals' perception of IPE and IPP was established prior to the intervention and the effect of the intervention was determined from the change, if any, in their perception following the implementation. Also, the student’s phonological and morphological awareness was established prior to the intervention and the effect of the intervention on their academic growth was determined from the change, if any, in the student’s
phonological and morphological awareness after the IPE and IPP strategies had been implemented. In order to determine the effectiveness of the interprofessional education strategies, the same survey and assessments that were administered as a pre-test were repeated as a post-assessment. The post-survey and assessment results were compared to baseline data. Two paired-sample *t*-tests were conducted to determine if a statistically significant difference existed between the pre-assessment and post-assessment scores. Anecdotal records were coded and analyzed to determine trends and themes that appear. Surveys, assessments, and anecdotal records were carefully examined and analyzed to determine changes and trends, and then conclusions were drawn.

**Intervention Strategies**

For the professionals, the intervention took place during a one hour meeting, once per month. The instruction and focus of the intervention varied for each meeting. The first intervention focused on getting to know the other professionals and building foundational aspects of that professional relationship. The remaining meetings focused on collaborative goal planning, keeping a therapy register, and increasing the line of communication and flexibility in instruction. Table 1 details the monthly meetings and the focus of each meeting.

For the first-grade classroom, the intervention took place for thirty minutes each day three times a week. For the kindergarten classroom the intervention took place for thirty minutes each day once a week. For the classrooms, the plan of instruction varied each week. At the beginning of the intervention, the students were introduced to the targeted language domain. The first two weeks were spent explicitly teaching the language rules to students. Then, the following weeks were spent manipulating these rules and practicing with words. Instruction was
implemented in accordance with pre-survey and pre-assessment results. Table 2 details the weekly plan for both of the targeted classrooms through the intervention.

Table 1

*Monthly Meeting Focuses and Implications*

<table>
<thead>
<tr>
<th>Month One: October 11, 2021</th>
<th>Monthly Focus</th>
<th>Kindergarten Implications</th>
<th>First-grade Implications</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>- Focus on establishing a collaborative partnership through obtaining a functional goal planning mindset. - Prompt the professional pair to establish a line of communication, review student academic history, and collaboratively plan goals for the targeted students.</td>
<td>-Met outside of the school day and followed through with introductions and expectations for the course of the intervention. -Discuss certain topics and activities to incorporate with the students that would increase participation and ease transition into the integrated instruction model.</td>
<td>-Shifted seating chart to better serve the targeted students for the integration model. -Discuss students' goals, performance, tips that help them in the classroom, working on student’s posture during phonics time to foster their speech.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Month Two: November 8, 2021</th>
<th>Monthly Focus</th>
<th>Kindergarten Implications</th>
<th>First-grade Implications</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-Introduce idea of therapy register and carryover techniques. -Sharing resources that are used in the classroom so that the SLP can come to the integration class time prepared and have looked at the content curriculum that the teacher is instructing, also can alter integrated curriculum to better serve their in class performance.</td>
<td>-Utilization of the mailboxes in the front office. -The teacher is to leave the resources and instruction packets in the SLP’s mailbox in the mornings on the days of the intervention.</td>
<td>-Utilization of the mailboxes in the front office. -The teacher is to leave the resources and instruction packets in the SLP’s mailbox in the mornings on the days of the intervention. -Keeping a therapy register of putting student’s work in the mailboxes as well so that both professions can track student progress in and out of the classroom.</td>
</tr>
</tbody>
</table>
Month Three: December 8, 2021

- Focus on ideas of interdependence in the integration model, and flexibility for alternate instruction methods.
- Ideas of how to differentiate instruction to better meet student needs.
- Referring some of the targeted students to speech therapy.
- Recruiting more students for next semester to be targeted through the integration model and that might be in need of alternate instruction methods like the integration model of instruction.

Table 2

Weekly plan for Integrated classroom instruction: IPE approach

<table>
<thead>
<tr>
<th>Week One: (Sept. 29- Oct. 1)</th>
<th>Kindergarten Target</th>
<th>First-grade Target</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-Introduce professional partnership.</td>
<td>-Introduce professional partnership.</td>
</tr>
<tr>
<td></td>
<td>-Administer pre-survey and pre-assessments.</td>
<td>-Administer pre-survey and pre-assessments.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Week Two: (Oct. 4 - Oct. 8)</th>
<th>Kindergarten Target</th>
<th>First-grade Target</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-Identify and build rapport with targeted students</td>
<td>-Identify and build rapport with targeted students</td>
</tr>
<tr>
<td></td>
<td>-Begin intervention of integrating instruction models during classroom language time.</td>
<td>-Begin intervention of integrating instruction models during classroom phonics time.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Week Three: (Oct. 11 - Oct. 15)</th>
<th>Kindergarten Target</th>
<th>First-grade Target</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-explicit instruction on identifying letters, letter sounds, and writing letters.</td>
<td>-teaching a new phoneme /i/.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Week Four: (Oct. 18 - Oct. 22)</th>
<th>Kindergarten Target</th>
<th>First-grade Target</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-teaching suffixes through explicit instruction.</td>
<td>-letter sound fluency: segmenting phonemes and blending phonemes.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Week Five: (Oct. 25 - Oct. 29)</th>
<th>Kindergarten Target</th>
<th>First-grade Target</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-suffix practice through supplemental activities.</td>
<td>-letter sound fluency: nonsense blending phonemes.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Week Six: (Nov. 1 - Nov. 5)</th>
<th>Kindergarten Target</th>
<th>First-grade Target</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-focus on teaching rhyming through explicit instruction.</td>
<td>-syllable and phoneme deletion in nonsense words.</td>
</tr>
</tbody>
</table>
### Week Seven:
(Nov. 8 - Nov. 12)
- Recognizing rhymes and suffixes through pictures, supplemental activities.
- Syllable and phoneme substitution in nonsense words.

### Week Eight:
(Nov. 15 - Nov. 19)
- Rhyming practice and supplemental activities.
- Syllable and phoneme addition in nonsense and real words.

### Week Nine:
(Nov. 29 - Dec. 3)
- Writing, spelling, rhyming words.
- Writing and building words.

### Week Ten:
(Dec. 6 - Dec. 10)
- Administer and send out post surveys, post-assessments.
- Administer and send out post surveys, post-assessments.

## Summary

The study examined the effects of Interprofessional Education and Interprofessional Practices for developing professional identity, enhanced communication, and collaborative goal sharing as the professionals worked to foster language development for students in a Kindergarten and a first grade classroom. This section described the setting of the study, the participants, and the princess that was used in an attempt to answer the question, “What are the effects of a collaborative approach in education through Interprofessional Education (IPE) and Interprofessional Practices (IPP) of classroom teachers and speech-language pathologists to develop professional identity, communication skills, and goal sharing?” The next sections will explain the results and recommendation of the study.
Chapter IV

Results

The purpose of this chapter is to provide an analysis of data collected for this study designed to address the research question, “What are the effects of a collaborative approach in education through Interprofessional Education (IPE) and Interprofessional Practices (IPP) of classroom teachers and speech-language pathologists to develop professional identity, communication skills, and goal sharing?”

Data are presented in narrative text and are supported by tables and figures. The purpose of this study was to investigate the effects of Interprofessional Education (IPE) and Interprofessional Practices (IPP) on the development of professional relationships, communication, and collaborative goal sharing to determine if this had an impact on the achievement of identified students. The participants for this study were two classroom teachers, one speech-language pathologist, three kindergarten students, and five first-grade students.

Intervention

Over the course of this study, the students were targeted through instruction addressing a language domain in accordance to the Arkansas Academic Standards for their specific grade level. For the first two weeks, the students were introduced to the principles of the language domain and were directly taught the rules, the following weeks were devoted to practice of the skills of these domains. For the professional pairings, the first meeting was focused on promoting the professional relationship that fostered communication and collaborative goal sharing. Each of the following meetings, which occurred every two weeks, a new focus on IPE and IPP was introduced. For all participants, the intervention took place over the course of ten total weeks.
The professional participants were given a pre-survey in order to determine their understanding of IPE and IPP both before the intervention began and at the end of intervention (see Appendix E1, E2). The survey included questions pertaining to their current perception and attitude toward these practices, as well as their current experience with or exposure to collaborative practices with one another. This assessment was utilized as well as ongoing anecdotal observations which were recorded during the course of the study. The kindergarten students were assessed given the Kindergarten Daily Language Warm-Up (KDLWU) to determine their understanding of morphological language components. For the first-grade students, the Phonological Awareness Screening Test (PAST) was administered in order to evaluate their understanding of the varying aspects of phonological awareness both before the intervention began and at the end of intervention.

**Baseline data**

In order to establish baseline data for the professional pairings, the pre-survey was used. The survey addressed specific questions for the speech-language pathologist, as well another survey for the classroom teachers that was more specific to their career. These surveys measured the professionals' experience with and attitudes towards IPE and IPP. This type of assessment was used in order to measure the professional’s likeliness to engage in collaborative instruction strategies at the beginning of the study and before instruction of Interprofessional Education strategies began.

These surveys measured the participants' understanding of IPE and IPP, as well as their perceptions toward this teaching strategy. Figure 3 illustrates each professional’s pre-assessment score. For the administration of the survey, each professional participant was emailed a link to a Google form in which they completed the survey independently. Participants were given an
unlimited amount of time to complete the pre-assessment survey. The survey was sent out on October 1, 2021. Figure 3 illustrates pre-assessments scores of the professional pairings.

![Professional Pre-assessment Survey Scores](image)

**Figure 3. Professional Pre-assessment Survey Scores.**

In order to establish baseline data for the kindergarten students, the *Kindergarten Daily Language Warm-Up* was used. This assessment measures components of morphology such as plurals and rhyming. This assessment was used to measure a student's level of morphological awareness at the beginning of the study and before instruction on morphological components began. The *Kindergarten Daily Language Warm-Up* assessment measured the student’s morphological accuracy and understanding. Figure 4 illustrates each student’s pre-assessment score. During the *Kindergarten Daily Language Warm-Up*, students were auditorily presented with questions or language prompts and were assigned to answer as best they could. The administrator recorded the correct and incorrect responses. The *Kindergarten Daily Language Warm-Up* was administered on October 1, 2021. The mean of the data obtained was 4.33; the median was 4, and the range of the data was 3, with 6 as the highest score and 3 as the lowest score. Figure 4 illustrates the *Kindergarten Daily Language Warm-Up* pre-assessment scores.
In order to establish baseline data for the first-grade students, the Phonological Awareness Screening Test was used. This assessment measures components of phonology such as phonemic sounds of words. This assessment was used to measure a student's level of phonological awareness at the beginning of the study and before instruction on phonological components began. The PAST assessment measured the student’s phonological component accuracy and understanding. Figure 5 illustrates each student’s pre-assessment score. During the PAST, students were auditorily presented with a word and then told to repeat the word leaving off a certain component dependent on the level being assessed. The administrator recorded the correct and incorrect responses. The PAST was administered on September 29, 2021. The mean of the data obtained was 7; the median was 6, and the range of the data was 10, with 13 as the highest score and 2 as the lowest score. Figure 5 illustrates the PAST pre-assessment scores.
**During Intervention**

During the intervention, data were collected to determine the professional’s progress in developing knowledge of IPE and skills using IPP. Data collected included anecdotal observations. Anecdotal records included such information as the researcher’s observations, classroom teacher comments, and speech-language pathologist comments.

**Anecdotal records.** Observations were recorded in order to track trends that may not be reflected in the post assessment scores. Trends that appeared throughout the study include effective goal setting, development of professional identity, and interdependence. Table 3 demonstrates the trends and patterns noted from anecdotal observations throughout the intervention.

**Table 3**

*Illustration of Anecdotal Records*

<table>
<thead>
<tr>
<th>Week</th>
<th>Anecdotal Content</th>
<th>Analysis and Implications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week One</td>
<td>-SLP: “I always wait for the classroom teacher to engage in conversation first, I do not want to interrupt or disturb instruction to talk to about a</td>
<td>-This shows how the SLP is hesitant and does not feel as though she is able to freely communicate with the classroom teachers.</td>
</tr>
</tbody>
</table>
### Week Two
**October 8, 2021**

- Kindergarten teacher: “This one (pointing at student 1) really loves the dance break and benefits from having a movement break”
- SLP: “Ok everyone, let’s get up and join the class and do the dance break”
- SLP: “Alright students 1, 2, 3, come back and let’s finish our work now”

- This better helps the SLP to see how these specific students function in the classroom and helps her to have cues and tips that could benefit that certain student in the therapy room or in their classroom next year.

### Week Three
**October 15, 2021**

- Student 1: *Begins to fuss when the music in the classroom begins.*
- SLP: “Student 1, Kindergarten teacher told me last week that you love the dance break, would you like to go and do the dance break and then come back?”
- Student 1: *Nods up and down. Goes to do the dance break and then comes back to the table smiling and returns to work.*

- Practical example of successful collaboration in mitigating a behavior outburst in the classroom. Having the knowledge that the classroom teacher had about this student aided the SLP in her ability to work alongside this student in the classroom setting.

### Week Four
**October 18, 2021**

- First-grade teacher: “SLP am I teaching this right, it feels wrong but I don’t know how else I am supposed to teach it”
- SLP: “We need to teach the vowel with the nasal, not separate”
- First-grade teacher: “Yes exactly that is my worry, I do not want to confuse them, I

- This example entails sharing expertise. With the SLP in the room during the instruction time of the SLP expertise (phonics), the classroom teacher was able to express doubt about instruction and ask the SLP for guidance and collaboration in how to do the instruction.
**INTERPROFESSIONAL EDUCATION AND PROFESSIONAL DEVELOPMENT**

| Week Five | -SLP: “Thanks for letting us come in, and for working with us”  
-First-grade teacher: “oh thank you guys - ya know there is so much more functional support in the classroom with you in here and I feel like I am truly getting a greater knowledge of the students by having that extra support in the classroom” | -This proves the effectiveness of the extra support in the classroom and demonstrates the goal of the collaboration, which is an increased ability to target students with language needs. |
|---|---|---|
| Week Six | -SLP: “Is there anything different you want us to do today or sit anywhere different?”  
-First-grade teacher: “No, what you come in and do is amazing. I feel like I can actually teach when you guys come in. It is so relieving and I feel like I can actually get in my groove and just teach” | -This shows the confidence that the teacher gains by the SLP being in the room, and also proves the needed support in the classroom so that the teacher has the ability to teach without worry of misinstruction, or a student with language needs not being met. |
| Week Seven  
November 12, 2021 | Student 2: “Oh I remember doing this! I loved this!”  
SLP: “Yay, I am glad that you are enjoying it!”  
“Kindergarten teacher, could you put these sheets that they completed last time in my mailbox so that I am able to see their progress?”  
Kindergarten teacher: “Yes, of course” | -Showing themes of shared materials and how it is benefiting the students for dual exposure over a task. Collaboration among SLP and teachers where they are able to compare the work from the first time to the second time. Therapy register established. |
<p>| Week Eight | -First-grade teacher: “I was | -Shows the development of |</p>
<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>November 15, 2021</td>
<td>SLP: “thinking of you when I got these face shields, I do not use them, would you like to have them? I can bring them down to your room later?” SLP: “Oh yes that would be fantastic. Thank you so much for thinking of me”</td>
<td>the relationship between the pair and the increased thought of the other and how they could better their work. Sharing materials and working together.</td>
</tr>
<tr>
<td>Week Nine</td>
<td>-First-grade teacher: “I think that student 3 needs more guidance and help during the phonological instruction part of the class time” SLP: “Ok, I did notice in therapy the other day that when I explicitly and directly did a review of the principles they did better with the following exercises” -First-grade teacher: “That is good to know, maybe student 4 just needs someone to sit and make sure they are focused, following along, and engaged in the instruction part, then they may have more success when we do the practice word drills”</td>
<td>-Showing carryover technique - things that worked well in therapy being applied in the classroom through the support of the one on one with the SLP in the room.</td>
</tr>
<tr>
<td>November 29, 2021</td>
<td>-Substitute in First-grade classroom: “Great, I am so glad that y’all are here right now, she said you would be coming! We just started phonics so that is perfect timing!” SLP: “Oh yes of course! I can lead the phonics instruction if you would like” Substitute in First-grade classroom: “Yes that would be so helpful, I was a little confused reading the plan” SLP: “ok great, just jump in whenever or if you want to”</td>
<td>-Showing that the SLP is able to independently lead the phonics instruction for the class, even when the teacher is unable to be there, the students do not have to miss learning objectives or class instruction plans. Reliance on the lesson plan - we had previewed the plan and so the SLP was able to confidently lead the lesson plan.</td>
</tr>
</tbody>
</table>
**Post Intervention**

To determine the effectiveness of the intervention using the strategies of IPE, IPP, and integrated classroom model of instruction for both professional pairings and targeted students, the professional surveys, the *Kindergarten Daily Language Warm-Up* assessment and the *Phonological Awareness Screening Test* assessment were repeated as post-assessments at the conclusion of the study. All participant’s scores were recorded and analyzed.

**Post-assessment data.** Figure 6 illustrates each professional participant's post-assessment score. Through the surveys, each professional responded to questions pertaining to their experience with IPE and IPP, which included their attitude toward the collaborative approach. There were 20 questions each presenting resonances with a 5 point Likert-scale. The researcher took the numeric value of each response and totaled it out of 100, in order to produce a score. The score on the graph is representative of the score from the post-intervention data. The surveys were sent out December 12th, 2021. The mean of the data obtained was 73.33; the median was 70, and the range of the data was 22, with 86 as the highest score and 64 as the lowest score. Figure 6 illustrates the professional’s survey scores.
Figure 6. Professional Post-assessment Survey Scores.

Figure 7 illustrates each kindergarten student’s post-assessment score using the Kindergarten Daily Language Warm-Up assessment. Through the assessment, each kindergarten student answered questions pertaining to prefixes, suffixes, and rhyming. The administrator calculated the total correct and incorrect responses, in order to produce a score. The score on the graph is representative of the score from the post-intervention data. The post-intervention assessment was administered on December 21, 2021. The mean of the data obtained was 10.33; the median was 7, and the range of the data was 10, with 17 as the highest score, and 7 as the lowest score. Figure 7 illustrates the Kindergarten Daily Language Warm-Up post-assessment scores.
Figure 7. Kindergarten Post-assessment Scores on the KDLWU.

Figure 8 illustrates each first-grade student’s post-assessment score using the PAST assessment. Through the assessment, each first-grade student answered questions pertaining to phonological concepts such as sound patterns and their meanings. The administrator calculated the total correct and incorrect responses at syllable, onset-time, and phoneme level, in order to produce a score. The score on the graph is representative of the score from the post-intervention data. The post-intervention assessment was administered on December 21, 2021. The mean of the data obtained was 24.8; the median was 27, and the range of the data was 12, with 31 as the highest score, and 19 as the lowest score. Figure 8 illustrates the PAST post-assessment scores.
Comparison of data. Figure 9 shows each professional participant's score on the pre-assessment and post-assessment surveys. The mean of the data obtained increased by 3.33; the median of the data increased 5, and the range of the data increased by 5, with a maximum of 5 and minimum score increase of 0. Figure 9 illustrates each of the professional’s scores. The data shows that 2 of the 3 professionals had an increase in their perception of IPE. The other professional’s score remained the same.
Figure 10 shows each kindergarten student’s score on both the pre-assessment and post-assessment of the *Kindergarten Daily Language Warm-Up*. The mean of the data obtained increased by 6; the median of the data increased by 4, the range of the data increased by 8, with the highest score increasing by 11 and the lowest by 3. Figure 10 illustrates each of the kindergarten student’s scores.

*Figure 10.* Kindergarten students’ pre-assessment and post-assessment scores on the *KDLWU*.

Figure 11 shows each first-grade student’s score on both the pre-assessment and post-assessment of the *PAST*. The mean of the data obtained increased by 17.8; the median of the data increased by 16, the range of the data increased by 21, with the highest score increasing by 29 and the lowest by 8. Figure 11 illustrates each of the first-grade student’s scores.
Figure 11. First-grade students’ pre-assessment and post-assessment scores on the PAST.

Data Analysis

In order to determine the effects of the IPE and IPP instruction approach for professionals and targeted students, the results of the student’s pre-assessment and post-assessment were analyzed. The pre-assessment and post-assessment means of the Kindergarten Daily Language Warm-Up and the Phonological Awareness Screening Test were compared. The results were analyzed using a paired-sample $t$-test with the alpha levels set at .05.

Pre-assessment and post-assessment analysis of Kindergarten Daily Language Warm Up. In order to measure the statistical significance between students’ scores before and after the intervention, the assessment results were statistically compared using a paired-sample $t$-test. The pre-assessment revealed a maximum score of 6 and a minimum score of 3. The post-assessment revealed a maximum score of 17 and a minimum score of 7. The analysis did not reveal a statistical significance between the pre-assessment and post-assessment scores, $t$-Stat = 2.384; $t$-Critical = 4.302; P > X. The mean of the pre-assessment was 4.33 and the mean of the post-assessment was 10.33. Table 4 represents the results of the paired samples $t$-test.
Table 4

Results from the Paired-sample t-test for the Kindergarten Daily Language Warm Up Assessment

<table>
<thead>
<tr>
<th>Pre-assessment</th>
<th>Post-assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>Mean</td>
</tr>
<tr>
<td>3</td>
<td>4.333</td>
</tr>
</tbody>
</table>

Pre-assessment and post-assessment analysis of *Phonological Awareness Screening Test*. In order to measure the statistical significance between students’ scores before and after the intervention, the assessment results were statistically compared using a paired-sample *t*-test. The pre-assessment revealed a maximum score of 13 and a minimum score of 2. The post-assessment revealed a maximum score of 31 and a minimum score of 19. The analysis revealed a statistical significance between the pre-assessment and post-assessment scores, *t*-Stat = 4.967; *t*-Critical = 2.776; P < 0.00766512. The mean of the pre-assessment was 7.00 and the mean of the post-assessment was 24.80. Table 5 represents the results of the paired-sample *t*-test.

Table 5

Results from the Paired-sample *t*-test for the *Phonological Awareness Screening Test* assessment.

<table>
<thead>
<tr>
<th>Pre-assessment</th>
<th>Post-assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>Mean</td>
</tr>
<tr>
<td>5</td>
<td>7</td>
</tr>
</tbody>
</table>

Summary

Based on the anecdotal records, the pre-assessment and post-assessment results, and the *t*-test results, comparisons were made between the data in order to determine if IPE, IPP, and the integrated instruction model increased professional identity, communication, and collaborative
The researcher compared pre-assessment and post-assessment results of the professional surveys, the *Kindergarten Daily Language Warm-Up* and the *Phonological Awareness Screening Test* assessments. From the results of the professionals surveys, two of the three professional participants made gains in their perception of IPE and IPP. According to the results of the Kindergarten Daily Language Warm-Up, all of the three kindergarten participants made gains in their morphological understanding. From the results of the PAST, all five first-grade students made gains in their understanding of phonological awareness. The researcher made observations from anecdotal records as well as assessments. Professionals demonstrated growth in their confidence for instruction and development of professional identity, communication, and collaborative goal sharing through the intervention. Students demonstrated growth in their language skills pertaining to components of phonics and morphemes throughout the course of the study.

This chapter has presented analysis of data collected for the purposes of determining the effects of IPE, IPP, and the integrated model of instruction on student performance in language. Chapter V will provide a discussion of the results, conclusions drawn from the results, limitations and implication of the research and recommendations for further study.
Chapter V

Discussion

The current study aimed to understand the effect that Interprofessional Education (IPE) and Interprofessional Practices (IPP) have on classroom teacher and speech pathologist knowledge and skills of collaboration strategies and their perceptions of development for professional identity. The study sought to determine how participants can best develop collaboration among instruction models in the classroom that target students identified with language needs in the classroom. In health based interprofessional pairings, it has been recommended that knowledge of interprofessional roles alongside communication skills should be the primary learning outcomes (Suter et al, 2009). Due to the increase in the professionals’ understanding of their collaborative pairings and professional roles, they obtained a greater appreciation for and likeliness to work alongside an individual in that profession. This collaboration affects the students as they receive instruction through a higher level of expertise which addresses their needs both in the classroom and in therapy services. This model can enrich the student’s academic, social and emotional development, as well as improve the learning environment as it pertains to their language needs.

The present study evaluated an Interprofessional Education approach to instruction among classroom teachers and speech pathologists to support student’s morphological and phonological awareness. This study addressed the question, “What are the effects of a collaborative approach in education through Interprofessional Education (IPE) and Interprofessional Practices (IPP) of classroom teachers and speech-language pathologists to develop professional identity, communication skills, and goal sharing?”
The results of the present study suggest that Interprofessional Education and Interprofessional Practices which utilize the integrated model of instruction has practical significance for professional pairings to develop professional identity, communication, and collaborative goal sharing. There was practical significance on the improvement of morphological awareness in one kindergarten classroom, and statistical significance for phonemic awareness in one first-grade classroom. Results were obtained by analyzing the professional pre-assessment and post-assessment scores, which indicate gains in perception of IPE and IPP. Results obtained from analyzing the pre-assessment scores and post-assessment scores of the kindergarten students indicate practical gains in morpheme awareness. Analyzing the results of the pre-assessment and post-assessment scores of the first-grade students indicate statistically significant gains in phonemic awareness. For the professional pairings and the kindergarten students, the study found a practical significance between pre-assessment and post-assessment data. For the first-grade students, the study found a statistical significance between pre-assessment and post-assessment data. Additionally, anecdotal records support the gains for the classroom teachers and speech-language pathologists in their development of confidence, professional identity, and effective classroom instruction models using IPE and IPP principles.

This chapter will present the conclusions, limitations, implications, and recommendations from this study.

Conclusions

Based on the results of this study, through interprofessional education, classroom teachers and speech-language pathologists experience an increase in instruction confidence, development of professional identity, and professional interdependence in alternate instruction methods.
Student academic gains were made and attributed to the implementation of Interprofessional Education and Interprofessional Practices among classroom teachers and speech-language pathologists.

Another component of this research design revealed the gains in student performance among classrooms in which teachers are practicing IPP. These academic gains may be attributed to the integrated instruction model due to the targeted instruction for specific, identified students.

Through statistical and observable comparison of pre-assessment and post-assessment data, kindergarten students’ language showed improvement in morphological awareness such as letter recognition, suffix identification, and rhyming. First-grade students’ language showed improvement in phonological awareness components such as letter sound fluency and syllable manipulation.

Limitations

As with any study, there were factors over which the researcher had no control that may have affected the results of this study, and it is important to interpret the findings of this study with full knowledge of limitations. Some factors may have positively influenced the results while others may have negatively influenced the results.

Negative limitations. Some factors that may have negatively influenced the results include lasting effects of COVID-19 due to previous remote learning, requirement of face mask coverings, low professional pairing participant number, and time constraints for outside of school meetings.

Schools changed drastically due to the COVID-19 pandemic, and lasting impacts were made on both the classroom teachers and the students. Because of the pandemic, in the previous two years, many students chose to do remote learning in which they joined their classroom via
Zoom. Many students in both the kindergarten class in which I conducted my intervention, had never been inside of a school before until this year. My intervention took place at the beginning of the school year in September. At that time these students had only ever been in a school for a few weeks. Due to this truth, the kindergarten teacher had not only the responsibility of teaching her students curriculum, but also teaching and reinforcing classroom policies and school expectations. This was an understandably overwhelming time in which she was forced to play catch up for these students academically and behaviorally. Because of those challenges, she was unable to devote time and energy to the intervention project exclusively, causing this to be a limitation. Another impact from the pandemic is the requirement of mask facial coverings. Working on speech and language, it is understood that as humans, “the most imitative creature in the world, and learns at first by imitation,” (Noë, 2016, para. 1). Due to the mandated facial coverings, it created a challenge for students and likely stunted their language development. Another limitation of the study is the low sample size of speech-language pathologists and classroom teacher pairings. The research intervention was designed to have at least four professional pairings, but due to the fact that there was only one speech-language pathologist employed at the school in which the intervention took place, it was unfeasible for the speech-language pathologist to be in four varying pairings. This leads to the last limitation of the study which is the time constraint pertaining to the outside of school meetings. The effectiveness of the intervention is reliant upon the professionals' collaboration. Due to external circumstances, it was oftentimes challenging to find time to meet outside of the school day for both the speech-language pathologist and the classroom teachers.
Implications

The results of this study imply that instruction using interprofessional education and practices may significantly improve students’ language development. Results suggest that using the integrated model of instruction can increase students’ academic success in a more targeted and personalized learning environment. As students progressed through the intervention, their language development increased from the application of the strategies.

Implementation. I would implement Interprofessional Education (IPE) and Interprofessional Practices (IPP) through the integrated instruction model because of the gains exhibited in this study, as well as the statistical probability attributing the growth to the method. This instruction model allows for personalized instruction to each student through the collaboration of the speech-language pathologist and classroom teacher planning together, sharing resources, implementing carryover techniques, and creating an interdependent instruction. I believe that this intervention was successful because it brought a new sense of structure and creativity to the classroom instruction. Being able to personalize the instruction methods to the student enhances student participation and adherence to the curriculum tasks.

Recommendations

Though this study was found to be effective, instructing and finding the balance of when to integrate therapy services is a continuous process of reflection and adaptation for improvement. This section provides recommendations for further research as well as for classroom implementation.

Further Research. Recommendations for further research include utilizing graduate students’ placements for professional pairings, include student input, and obtain student participants that all present with the same specific communication disorder. If I were to have the
opportunity to repeat this study, I would utilize the graduate programs that are located at our college. There is both an education and speech-language pathology master's program that place students at local schools to fulfill their graduate placements. The hope behind using graduate students is that they would have more time to devote to the research project, a similar schedule, and would reap great benefits of having IPE training prior to entering their career field which would increase their interest in the project. This also would increase the available number of classroom teacher and speech-language pathologist pairings, resulting in higher participant number. Having another chance to do this research, I would have included student interviews or surveys into my research design. Obtaining this data form will give insight into the student’s perceptions of the interprofessional approach and the effects that it has on the students that are not shown through assessment scores. Another way I would modify this research design is through studying student participants that present with the same communication disorder. In order to better study the carryover technique and shared therapy register component of interprofessional education, it would be better if the targeted students were all receiving speech services at the school. Having participants with the same communication disorder would allow for a more seamless assessment process as well as targeted research design. This would allow the researcher to better study the components of interprofessional education on a greater scale. These areas might be considerations for further research.

**For the classroom.** It is recommended to use the interprofessional approach of an integrated classroom instruction model between classroom teachers and speech-language pathologist to enhance student’s language development. Students not only made academic gains, but also had personal learning benefits due to the intervention. The results of this study indicate that teachers and speech-language pathologists should implement interprofessional collaboration
INTERPROFESSIONAL EDUCATION AND PROFESSIONAL DEVELOPMENT

strategies in instruction. Though its effectiveness has been supported in language, it may also be utilized in math, reading, or science when there are students in the classroom who have been identified with delays or challenges in those learning areas. This collaborative method of instruction can be utilized when relevant and may be beneficial to the students.

Summary

This study was separated into five sections. Chapter I offered a statement of introduction and explanation of this study. Chapter II provided a review of literature concerning interprofessional practices and integrated instruction models. Chapter III explained the methodology for the research study within which the setting, participants, data collection methods, instruments used, and design for analysis were discussed. Chapter IV discussed the analysis of the results of the study. The baseline data, intervention methods, pre-assessments, post-assessments, and comparison of data were also explained within this chapter. Finally, Chapter V included the conclusion, limitations, implications, and recommendations for the study.

This study was undertaken to investigate the research question, “What are the effects of a collaborative approach in education through Interprofessional Education (IPE) and Interprofessional Practices (IPP) of classroom teachers and speech-language pathologists to develop professional identity, communication skills, and goal sharing?”

Based on the results of this study, it appears that Interprofessional Education (IPE) and Interprofessional Practices (IPP) through an integrated instructed model may have had a positive effect on developing professional identity, as well as student performance for morphological and phonemic awareness in kindergarten and first-grade classrooms.
References


Appendix A1

IRB Approval Letter

To: Avery Smith
From: Justin R Chinka, Chair
IRB Expedited Review
Date: 06/26/2021
Action: Expedited Approval
Action Date: 09/23/2021
Protocol #: 210532386A001
Study Title: A Collaborative Approach in Education through Interprofessional Education (IPE) and
Practices (iPP) of Classroom Teachers and Speech Language Pathologists to Develop
Professional Identity, Communication Skills, and Goal Sharing
Expiration Date: 06/20/2022
Last Approval Date: 09/23/2021

The above-referenced protocol has been approved following expedited review by the IRB Committee that oversees research with human subjects.

If the research involves collaboration with another institution then the research cannot commence until the Committee receives written notification of approval from the collaborating institution's IRB.

It is the Principal Investigator's responsibility to obtain review and continued approval before the expiration date.

Protocols are approved for a maximum period of one year. You may not continue any research activity beyond the expiration date without Committee approval. Please submit continuation requests early enough to allow sufficient time for review. Failure to receive approval for continuation before the expiration date will result in the automatic suspension of the approval of this protocol. Information collected following suspension is unapproved research and cannot be reported or published as research data. If you do not wish continued approval, please notify the Committee of the study closure.

Adverse Events: Any serious or unexpected adverse event must be reported to the IRB Committee within 48 hours. All other adverse events should be reported within 10 working days.

Amendments: If you wish to change any aspect of this study, such as the procedures, the consent forms, study personnel, or number of participants, please submit an amendment to the IRB. All changes must be approved by the IRB Committee before they can be initiated.

You must maintain a research file for at least 3 years after completion of the study. This file should include all correspondence with the IRB Committee, original signed consent forms, and study data.

cc: Angela Elisea, Investigator
Appendix A2

IRB Protocol Form

Protocol Number: 2105352886
Expiration Date: 05/20/2022
Investigator: Avery Grace Smith
Last Approval Date: 08/25/2021

University of Arkansas

Document Overview
Descriptive: Smith, Avery

Protocol Summary
Protocol Number: 2105352886
Sequence Number: 2
Status: Active - Open to Enrollment
Expiration Date: 05/20/2022
Last Approval Date: 08/25/2021
Investigator: Avery Grace Smith

Protocol Details
Type: Expedited

Summary/Keywords:
Application Date: 08/15/2021

Reference III: Reference III

Title: A Collaborative Approach in Education through Interprofessional Education (IPE) and Practice (IPP) of Classroom Teachers and Speech Language Pathologists in Develop Professional Identity, Communication Skills, and Goal Sharing

Areas of Research

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</table>

- What is the purpose of this research? Please explain in full why you are doing the research (class assignment, thesis, etc.). AND/OR state your hypothesis. See attachment too at sufficient response.

- I am an honors student in Communication Sciences and Disorders in the College of Education and Health Professions. This project is part of a larger research study and will fulfill the requirements of the Student Undergraduate Research Funding (SURF) grant that I received in December 2020. The proposed study is designed to investigate the effects of interprofessional education (IPE) and practice (IPP) on the professional development of classroom teachers and speech language pathologists through collaborative practices in order to develop professional identity, communication skills, and goal sharing. The study will take place in an elementary school in the Fayetteville School District, Northwest Arkansas. The goal of this research study is to foster collaboration and classroom teachers to recognize the importance of developing professional inter-professional relationships. The study will promote awareness of working collaboratively in bring together respective expertise for achieving a more effective and efficient means to goal setting and instruction and evaluate the degree educational needs of the students are met in a school-based setting. As the researcher, I will organize and facilitate meetings in order to collect data and to facilitate collaborative discussions with the IPE and the classroom teacher. The purpose of the identified goals is to engage and implement an integrated collaborative strategies to promote academic and personal growth. The strategies that I will implement for the professional development of classroom teachers and speech language pathologists through collaborative practices in order to develop professional identity, communication skills, and goal sharing.

- Are you collecting data on living individuals?
  - Yes

- Are you collecting data through intervention or interaction with these individual?
  - Yes

- Beyond the basic Participant Types (children, Adults, Students, adults, etc.) named elsewhere in this application, do you have a target population (particular group of people) you must to record? Some examples might be students in a particular class, members of a particular group or network, people in a specific age range (whether adult or minor), children in a particular school or class, etc.
Appendix A3

IRB Protocol Form

Yes

* Describe your target population.

The target population will consist of a maximum of four elementary students who are between 5-10 years of age, attending school in the Pyepompy School District, Northeast Arkansas. All participants will be identified as having speech and/or language deficits and receive services for speech-language therapy. The classroom teachers of these elementary participants will be involved in collaborative meetings with the researcher and the SLP in order to bring together their respective expertise for achieving a more effective and efficient means for goal setting and instruction in order to meet the diverse educational needs of these students.

* How are you recruiting participants? Are you sending in a public place asking people to take a survey, sending out mass emails, posting an ad or blast on a website or social media, or a public location, etc.? **Please note that all recruitment materials will need to be uploaded in the Notes and Attachments section.

The school principals, classroom teachers, speech pathologist and parents will be included in the selection of the participants. All participants in the study will be identified as having speech and/or language deficits and receive service-based therapy at XYZ Elementary School in the Pyepompy School District. Permission has been approved by the school district administration. Additionally, the Director of Special Education Services will obtain an SLP and school approval will be sought from the building principal. Selection of classroom teachers and student participants will be made with the direction of the building principal and the SLP. Permission may be requested via email, social media, and letters of corresponsedence explaining the purpose of the research study. An information letter and letter of consent will be sent to parents/guardians explaining the research study. A written permission statement of consent will be obtained from parents/guardians to allow selected students to participate in data collection.

Permission was obtained from the Pyepompy School District for this study in January 2021. A Zoom meeting was held in January 2021 with school district's Director of Special Education to explain the purpose of the research. (See Notes and Attachments)

* Provide a brief description of the procedures involving the participants.

The goal throughout the study is to develop an awareness of the adult plan that I designed which allows the student to adjust the predetermined structure and environment to his/her developmental needs. The most important aspect of this strategy is consistency. Each professional group must meet weekly for at least the allotted amount of time. It is important to both the SLP and the classroom teacher attend the weekly planning meetings, with a positive mindset and a willingness to implement suggestions from their professional partners. Intervention Goals and Therapy Regimen: Both the SLP and the classroom teacher should be well versed on the targeted student. This means that they both know the student's history, classroom performance, Individual Education Program (IEP) goals and levels, social-emotional and behavioral challenges in alignment with the developmental goals for speech-language therapy. In order for IEP to be effective, the SLP and classroom teacher must work together to create developmental goals for the student participant. The professional pairing must agree on a set of shared milestones for the targeted student and develop the steps of a proposed solution together. This implies that the SLP and classroom teachers will agree upon the goals, intervention plan, and therapy used to help the student meet established goals successfully. One aspect of this ongoing planning is the components of a change process. Keeping a record of the student developmental status both in therapy and in the classroom helps gauge the inconsistencies between pull-out services for therapy and classroom performance. This will help target specific goals and desired developmental achievement for the student through an inclusive approach of instructional practices incorporating Cartesian Techniques in the Classroom. A Cartesian technique is teaching a student to take the techniques learned in therapy and practice them across a variety of settings (Buer, 2016). The next is through meetings and communication with staff. It is important for frequent meetings to be held to discuss the idea of the final professional education (PPE) approach. The attendance of these monthly meetings may include the student classroom teacher, SLP, or other school staff members such as physical therapist or occupational therapist, and lastly, the student parent/guardians.

After the school day. During this time, the pairing is encouraged to get to know each other and spend intentional time together. They will also be directed to discuss their goals for the targeted student. This may include the student participant progress, potential barriers to development, and any suggestions or possible solutions that may benefit the student personal and academic improvement. The most important aspect of this strategy is consistency. Each professional group must meet weekly for at least the allotted amount of time. It is important to both the SLP and the classroom teacher attend the weekly planning meetings, with a positive mindset and a willingness to implement suggestions from their professional partners. Intervention Goals and Therapy Regimen: Both the SLP and the classroom teacher should be well versed on the targeted student. This means that they both know the student's history, classroom performance, Individual Education Program (IEP) goals and levels, social-emotional and behavioral challenges in alignment with the developmental goals for speech-language therapy. In order for IEP to be effective, the SLP and classroom teacher must work together to create developmental goals for the student participant. The professional pairing must agree on a set of shared milestones for the targeted student and develop the steps of a proposed solution together. This implies that the SLP and classroom teachers will agree upon the goals, intervention plan, and therapy used to help the student meet established goals successfully. One aspect of this ongoing planning is the components of a change process. Keeping a record of the student developmental status both in therapy and in the classroom helps gauge the inconsistencies between pull-out services for therapy and classroom performance. This will help target specific goals and desired developmental achievement for the student through an inclusive approach of instructional practices incorporating Cartesian Techniques in the Classroom. A Cartesian technique is teaching a student to take the techniques learned in therapy and practice them across a variety of settings (Buer, 2016). The next is through meetings and communication with staff. It is important for frequent meetings to be held to discuss the idea of the final professional education (PPE) approach. The attendance of these monthly meetings may include the student classroom teacher, SLP, or other school staff members such as physical therapist or occupational therapist, and lastly, the student parent/guardians.

* How long are the procedures likely to take? Include duration and frequency.

The study will have a duration of approximately 12 weeks during the Fall 2021 semester. Classroom teacher and SLP participants will be engaged in inter-professional meetings that take place weekly and to be a maximum of 12 weeks during the Fall 2021 academic semester. The researcher will participate in weekly (5-10) weekly observations of the student participant progress, classroom teacher instruction, and therapy by the SLP. Due to unknown challenges of COVID-19 safety guidelines, some observations and meetings may take place virtually using digital resources (if necessary).

* How will information be given to people to get their informed consent to participate in this research?

Answers should include specific methods (e.g., verbal consent, information handbook, online survey form, full consent form requiring signature documentation) **Please note that consent materials – from a script for verbal consent to full consent forms that require participant signature — must be uploaded in the Notes and Attachments section.

I will begin the study by sending an informational email to the parents of participants. The information will explain the research study and explain the role that their child will have as a participant in this study. The opportunity to ask and answer questions will be available for parents/guardians and school personnel. I will send home an informed consent form for parents to complete and confirm that the child can participate in the research study and data collection. (See Notes & Attachments)

* Does data collection rely on a scheduled event, such as a construction or specific date?

Yes

* Provide the date or data range, and the name of the event.

The researcher will begin observations and meetings in August 2021. The study will conclude after one semester, in December 2021 after approximately 12 weeks of implementation and data collection.
Appendix A4

IRB Protocol Form

* How will your data be collected? Include all that apply: online, on paper, in person, audio and/or video recordings. **Please note that all data collection materials will be used to complete the Notes and Attachments section. This includes surveys, questionnaires, interview questions or anything that is given to or asked of a participant.

Assessment and Data Collection: Quantitative data (pre-survey and post-survey) and coding of qualitative data (interviews, anecdotals notes, and student responses) will be used to explore the academic and behavioral outcomes of a collaborative approach to IRB. The data will be analyzed using qualitative and statistical methods.

* How will your data be stored? Include all that apply: electronically, on paper, audio and/or video recordings.

All information will be kept and maintained confidential to the extent allowed by applicable state and federal law and University policy. Confidentiality will be assured by the researcher through the establishment of a code. Each student participant and classroom teacher will be assigned a number at random to establish the code. All data will be stored and reported anonymously using the code. Only the researcher will have access to the code, and all data will be kept in a secure location or data file. Upon completion of the proposed study, the code will be destroyed.

* How will that data be kept secure?

Each student and classroom teacher will be assigned a number at random to establish the code. All data will be stored and reported anonymously using the code. Only the researcher will have access to the code, and all data will be kept in a secure location or data file. Once the proposed study is successfully completed, the code will be destroyed.

* Minimal Risk as defined in terms of harm is not greater than that which would be expected to occur in daily life or during the performance of routine physical or psychological examinations or tests. Will participants be exposed to more than minimal risk? Include in your consideration be potential of serious questions or legal or reputational risks in case of breach of confidentiality.

No

* Are there any direct benefits to the participants for participating in this study?

Yes

* Describe the benefits participants will or may receive.

There are no risks, other than those associated with regular classroom instruction and SLI therapy anticipated with this project. The potential benefits include awareness and implementation of modules of IPE/IRB and team approaches for resources, interventions to support teachers in use of effective practices, delivery of effective instruction, support for psychosocial development and the need for long-term outcomes that benefit children. Training and research could strengthen and reduce barriers of collaboration within school settings, promote a team approach for meeting the diverse needs of students, while supporting speech-language pathologists, classroom teachers, and other support staff in public schools as they educate the future leaders of our nation.

* Will the proposed research involve deception or the withholding of information from participants?

No

* Will the proposed research mandate medical clearance from a physician prior to participation?

No

* Will the proposed research involve gathering biological sample (blood, tissue, etc.)?

No

* Will the proposed research involve administering of substances or providing food and drink, other than water, to participants?

No

* Will the proposed research involve physical exercise or conditioning?

No

* Does the research require review by a non-CHoA IRB?

No

* Does this research require approval from another institution or agency, such as a school or privately owned business?

Yes

* In the Notes and Attachments section, please upload documentation confirming the approval of the agencies or institutions involved. Please type 'ok' to verify your understanding.
Appendix B

Letter from Partner School

Letter of Approval from Cooperating School Principal

Fayetteville School District
2900 North Salem Road
Fayetteville, AR 72704
(479) 527-3640
Mrs. Katie Oliver, Principal
katie.oliver@fayaz.net

August 16, 2021

To Whom It May Concern:

I am aware that Avery Smith is conducting a study titled, “A Collaborative Approach in Education through Inter-professional Education (IPE) and Practices (IPP) of Classroom Teachers and Speech Language Pathologists to Develop Professional Identity, Communication Skills, and Good Sharing” at Holcomb Elementary School, in Fayetteville, Arkansas. This study has been approved by Dr. Angela Elsaa, the University of Arkansas Professor, who is supervising this COEHP Honors Project. She has my permission to conduct this study, pending approval of the University of Arkansas Institutional Review Board committee.

Respectfully,

[Signature]

Katie Oliver, Principal
Holcomb Elementary School
Fayetteville School District
Appendix C

Letter to Parents/Guardians

Dear Parent/Guardian:

I am a student at the University of Arkansas studying to become a speech-language pathologist. I am also a student in the COEHP Honors program, and as part of the requirements for this program, I am conducting a research study at Holcomb Elementary School. The objective of this research study is to answer the study question, “What are the effects of a collaborative approach in education through inter-professional education (IPE) and practices (IPP) of classroom teachers and speech-language pathologists to develop professional identity, communication skills, and goal sharing?” This study will study the importance of regular communication between classroom teachers and speech-language pathologists about how to include speech-language goals as part of regular classroom instruction.

Your child has been selected to participate with his/her classroom teacher and the Holcomb speech-language therapist in this study. The study will include observations of your child and his/her interactions with the classroom teacher and speech-language therapist in order to determine academic improvement. I will collaborate with your child’s teacher about his/her progress, discuss learning goals, and review academic information (grades, test results, school information, IEP, etc.). I may also ask for your participation or input throughout the semester. Due to changing COVID-19 guidelines, some observations may be virtual using digital resources, as necessary.

I can only include your child in my research findings with your signed consent. Participation is voluntary, and there are no negative consequences if you choose not to allow your child to participate. By signing and returning the attached form, you grant permission for your child to participate with his/her classroom teacher in this research study and for me to observe and use your child’s work as part of the research study. Please note that confidentiality will be maintained and your child’s name will not be used in reporting results.

The attached informed consent form contains a more detailed description of this project. Please take time to read it over carefully. Feel free to contact my U of A supervising professor, Dr. Angela Ellis (aeliss@uark.edu) or contact Mrs. Sarah Canada at Holcomb Elementary (sarah.canada@u.ofar.net) with any questions you may have. Thank you for your cooperation.

Sincerely,

Avery Smith

Avery Smith, University of Arkansas Student
Communication Sciences & Disorders Program
Appendix D1

Informed Consent For Parents/ Guardians

INFORMED CONSENT FOR PARENT/GUARDIAN

Title:
"A Collaborative Approach in Education through Inter-professional Education (IPE) and Practices (IPP) of Classroom Teachers and Speech Language Pathologists to Develop Professional Identity, Communication Skills, and Goal Sharing"

Researcher:
Avery Smith, U of A Student in Communication Sciences & Disorders
COEHP Honors Program
agas807@uark.edu

University of Arkansas Faculty Supervisor
Dr. Angela Elsaas
Honors Faculty Mentor
University of Arkansas
College of Education and Health Professions
Department of Curriculum and Instruction
208 Peabody Hall
Fayetteville, AR 72701-1201
479-575-5492 office/ 479-601-2722 cell
alesaas@uark.edu

Compliance Contact Person:
Ro Windwalker
Compliance Coordinator
University of Arkansas
Research Integrity & Compliance
109 MLKG Building
Fayetteville, AR 72701-1201
479.575.2208
irb@uark.edu

Description:
The proposed study is designed to investigate the effects of a collaborative, team approach between classroom teachers and speech language pathologists for serving students in speech-language therapy services. The study will seek to investigate if regular communication about speech-language goals and discussion on how they can be reinforced through classroom instruction can improve student progress. The study will be conducted at Holcomb Elementary School in the Fayetteville School District, Northwest Arkansas. It will have a duration of approximately 12 weeks during the Fall 2021 semester. Due to unknown challenges of COVID-19 safety guidelines, some observations and meetings may take place virtually using digital resources as necessary.

The goal throughout this study is to promote the importance of classroom teachers and speech-language therapists working together to share practices and resources that support the goals of speech-language therapy in regular classroom instruction. The student participants will engage in normal classroom instruction and speech-language therapy.

Information will be collected about student progress through classroom assessments and school-based testing (MAP and ACT Aspire), along with any assessments given for identification of speech and/or language services. Other information that may be used for planning will be gained from existing school records, parent questionnaires/surveys, and data from Individual Education Plan and/or Section 504 Plan.

Risks and Benefits: There are no risks, other than those associated with regular, classroom instruction anticipated with this project. The potential benefits include improvement in the student’s overall academics; however, specific focus will be on speech-language skills, which may benefit both personal and academic improvement.

Voluntary Participation: Your child will participate in weekly observations during this research study. The meetings will not interfere with regular classroom instruction. The decision to allow your child’s
Appendix D2
Informed Consent For Parents/ Guardians

INFORMED CONSENT FOR PARENT/GUARDIAN

Information in this research study is completely voluntary. Participation is voluntary and there are no costs, rewards, or negative consequences if you choose not to allow your child’s information to be recorded and reported anonymously.

Confidentiality: All information will be kept secure and maintained confidential to the extent allowed by applicable State and Federal law and University policy. Confidentiality will be assured by the researcher through the establishment of a code. Each student will be assigned a number at random to establish the code. All data will be recorded and reported anonymously using the code. Only the researcher will have access to the code, and all data will be kept in a secure location or data file. Upon completion of the study, the code will be destroyed.

Right to Withdraw: If you (or your child) chooses now, or at any time, or for any reason, to not participate in this research study or for his/her test information to be used in the project, you may withhold or withdraw your consent. There are no negative consequences for this decision.

INFORMED CONSENT FOR PARENT/GUARDIAN

*** Please sign and return the section below and return to your child’s classroom teacher or Mrs. Sarah Canada, Speech-Language Therapist at Holcomb Elementary School.

Informed Consent

I have read the above statements and understand how to ask questions and express concerns, which were or must be satisfactorily responded to by the researcher or compliance contact person. I understand the purpose of the study, as well as the potential benefits and risks that are involved. I understand that participation is voluntary. I understand that significant new findings developed during this research can be shared with me and, as appropriate, my child. I understand that no rights have been waivered by signing the consent form. I have been given a copy of the consent form.

I, ____________________________, have read the description, I understand (please print parent/guardian’s name) the purpose of this study, the procedures that are to be used, the potential risks and benefits, how confidentiality will be established and maintained, as well as the option to withdraw. I have read and discussed this project with my child,

(please print child’s name)

My signature below indicates that my child and I freely agree for his/her participation and that grades and other information can be used to determine his/her academic progress in this research study.

___________________________
Parent/Guardian Signature

___________________________
Name of Child

___________________________
Teacher

___________________________
Date
INTERPROFESSIONAL EDUCATION AND PROFESSIONAL DEVELOPMENT

Appendix E1

Classroom Teacher Pre-Assessment/Post-Assessment Survey

1. I have been trained on Inter-professional Education (IPE) through professional development provided by my school district, or other.
2. I can easily define Inter-professional Education (IPE) and Inter-professional Practices (IPP) for implementation into my practices as a classroom teacher.
3. Working and learning alongside other professionals, specifically the speech-language therapist, but also other professionals such as occupational therapists, physical therapists, and/or special education service providers, in the school-based setting will help me to become a more effective teacher.
4. Working alongside other professionals, specifically the speech-language therapist, but also other professionals such as occupational therapists, physical therapists, and/or special education service providers, will further my understanding and development of my own professional identity.
5. I clearly understand my role and responsibilities as a classroom teacher in the partnerships with other professionals, specifically the speech-language therapist, but also other professionals such as occupational therapists, physical therapists, and/or special education service providers.
6. I learn from other professionals, specifically the speech-language therapist, but also other professionals such as occupational therapists, physical therapists, and/or special education service providers, in my school on a regular (weekly/bi-weekly) basis.
7. The faculty and staff at my school encourages and facilitates collaboration between varying professionals, specifically the speech-language therapist, but also other professionals such as occupational therapists, physical therapists, and/or special education service providers, within the school.
8. Student/client-centeredness increases when care is delivered by an inter-professional education (IPE) team approach.
9. I am knowledgeable of the other professionals, specifically the speech-language therapist, but also other professionals such as occupational therapists, physical therapists, and/or special education service providers, that I work alongside in my school to ensure that I meet the IEP goals of my students.
10. I have had professional development training, such as courses in higher education, training through my district/school, or other agencies regarding my understanding of supporting the goals for speech-language therapy, occupational therapy, physical therapy, and/or special education services.
11. It is necessary for school-based teams to collaborate, meet regularly, and plan together to effectively and efficiently meet the needs of students identified with learning deficits who are receiving special services and part of my classroom community.
12. I would like to collaborate more frequently with other professionals, specifically the speech-language therapist, but also other professionals such as occupational therapists, physical therapists, and/or special education service providers, who support the identified students in my classroom.
13. I can better implement IEP goals, such as speech-language therapy, occupational therapy, physical therapy, and/or special education services, through alignment with my classroom instructional practices if I had the opportunity to regularly (weekly/bi-weekly) collaborate about therapy goals, instructional practices, and progress of these identified students.
14. I feel confident in my knowledge of and ability to integrate therapy goals, specifically the speech-language therapist, but also other professionals such as occupational therapists, physical therapists, and/or special education service providers, within my classroom teaching practices.
15. I can communicate effectively and answer questions for parents of my students who receive additional special services about their IEP goals and therapy services.
16. I am willing to invest my personal time in order to collaborate with other professionals, such as speech-language therapy, occupational therapy, physical therapy, special education services so that I have a better understanding of how I can integrate their professional goals within my instructional practices.
17. I have additional questions about inter-professional education (IPE) and inter-professional practices (IPP) that I would like to address with professionals who deliver therapy, specifically the speech-language therapist, but also other professionals such as occupational therapists, physical therapists, and/or special education service providers.
18. I am aware of inclusive models that would provide more support within the classroom setting for my identified students receiving additional services, specifically the speech-language therapist, but also other professionals such as occupational therapists, physical therapists, and/or special education service providers.
19. I feel that parents need more information and knowledge about the therapy goals, such as specifically the speech-language therapist, but also other professionals such as occupational therapists, physical therapists, and/or special education service providers, in order to support their children at home.
20. I am confident in my knowledge as a classroom teacher to fully support my students through integration of their IEP goals and therapy goals within my daily instructional practices.

The survey will be formatted using a Five Point Unipolar Likert Scale. Unipolar scales are more contoured, allowing users to focus on a single item's absence or presence. The scale measures the ordinal data, but most of the time, unipolar scales generate more accurate answers. The five-point Likert scale is the one most familiar to the general public. It allows a neutral — or no opinion — response to a question or statement, with two polar opposite responses and two intermediate responses. The survey will utilize the unipolar satisfaction scale of: **Strongly Agree, Agree, Neither Agree or Disagree, Disagree, Strongly Disagree.**
Appendix E2

Speech-Language Pathologist Pre-Assessment/Post-Assessment Survey

1. I have been trained on Inter-professional Education (IPE) through professional development provided by my school district, or other.
2. I can easily define Inter-professional Education (IPE) and Inter-professional Practices (IPP) for implementing it into my therapy services as a speech-language pathologist.
3. Working and learning alongside other professionals, such as a classroom teacher, occupational therapist, physical therapist, and/or special education service providers in the school-based setting will help me to become a more effective speech-language therapist.
4. Working alongside other professionals, such as a classroom teacher, occupational therapist, physical therapist, and/or special education service providers in the school-based setting will further my understanding and development of my own professional identity in helping students to meet their IEP goals.
5. I clearly understand my role and responsibilities as a speech-language pathologist in the partnerships with classroom teachers, occupational therapist, physical therapist, and/or special education service providers through inclusive and integrated practices.
6. I learn from other professionals, such as classroom teachers, occupational therapists, physical therapists, and/or special education service providers in my school on a regular (weekly/bi-weekly) basis.
7. The faculty and staff at my school encourage and facilitate collaboration between varying professionals, such as speech-language therapists, occupational therapists, physical therapists, and/or special education service providers along with the classroom teachers within the school.
8. Student/client-centeredness and practices increase when care is delivered by an inter-professional education (IPE) and inter-professional practices (IPP) approach.
9. I am knowledgeable of the goals of other professionals, such as classroom teachers, occupational therapists, physical therapists, and/or special education service providers that I work alongside with in my school for an integrated approach to meeting the IEP goals of my students.
10. I have had professional development training, such as courses in higher education, training through my district/school, or other agencies regarding my understanding of supporting integrated goals for speech-language therapy, occupational therapy, physical therapy, and/or special education services in the classroom setting.
11. It is necessary for school-based teams to collaborate, meet regularly, and plan together for effectively and efficiently meeting the needs of students identified with learning deficits who are receiving special services.
12. I would like to collaborate more frequently with other professionals, such as classroom teachers, occupational therapists, physical therapists, and/or special education service providers, who support the identified students I serve through speech-language therapy.
13. I can better integrate IEP goals, such as speech-language therapy, occupational therapy, physical therapy, special education services, through alignment with classroom instructional practices if I had the opportunity to regularly (weekly/bi-weekly) collaborate about therapy goals, instructional practices, and progress of these identified students with the classroom teacher.
14. I feel confident in my knowledge of and ability to integrate and support therapy goals, such as speech-language therapy, and/or occupational therapy, physical therapy, special education services, within the classroom setting.
15. I can communicate effectively and answer questions for the parents of my students who receive special services about their additional IEP goals and how they are integrated in the classroom setting.
16. I am willing to invest my personal time in order to collaborate with other professionals, such as classroom teachers, occupational therapists, physical therapists, and/or special education services so I have a better understanding of how I can integrate student goals within my therapy practices.
17. I have additional questions about inter-professional education (IPE) and inter-professional practices (IPP) that I would like to address with other professionals, such as the classroom teacher, occupational therapist, physical therapist, and/or special education service providers.
18. I am aware of inclusive models that would provide more support within the classroom setting for identified students who are receiving additional services, such as speech-language therapy, occupational therapy, physical therapy, special education services.
19. I feel that parents need more information and knowledge about therapy goals, such as speech-language therapy, occupational therapy, physical therapy, and/or special education services, in alignment with classroom instructional practices to support their child/ren at home.
20. I am confident in my knowledge as a speech-language pathologist to fully support my students through integration of their IEP and therapy goals within the daily instructional practices of the classroom setting.

The survey will be formatted using a Five Point Unipolar Likert Scale. Unipolar scales are more contoured, allowing users to focus on a single item’s absence or presence. The scale measures the ordinal data, but most of the time, unipolar scales generate more accurate answers. The five-point Likert scale is the one most familiar to the general public. It allows a neutral — or no opinion — response to a question or statement, with two polar opposite responses and two intermediate responses. The survey will utilize the unipolar satisfaction scale of: Strongly Agree, Agree, Neither Agree or Disagree, Disagree, Strongly Disagree.
Appendix E3

Phonological Awareness Screening Tool (PAST)

<table>
<thead>
<tr>
<th>Name</th>
<th>Date</th>
<th>Grade</th>
<th>Age</th>
<th>Teacher</th>
<th>D.O.B.</th>
<th>Evaluation</th>
</tr>
</thead>
</table>

**INSTRUCTIONS:** See Appendix B: Reading Section 11.2. Assessment of Phonological Awareness for scores in each level of the PAST.

**RESULTS**

<table>
<thead>
<tr>
<th>Basic Syllable</th>
<th>Center</th>
<th>Average</th>
<th>Highest Possible Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diphthong</td>
<td>90</td>
<td>90</td>
<td>90</td>
</tr>
<tr>
<td>CVC</td>
<td>90</td>
<td>90</td>
<td>90</td>
</tr>
<tr>
<td>CV</td>
<td>90</td>
<td>90</td>
<td>90</td>
</tr>
</tbody>
</table>

**Additional Phoneme**

<table>
<thead>
<tr>
<th>Center</th>
<th>Average</th>
<th>Highest Possible Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>90</td>
<td>90</td>
<td>90</td>
</tr>
</tbody>
</table>

**Total**

<table>
<thead>
<tr>
<th>Center</th>
<th>Average</th>
<th>Highest Possible Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>90</td>
<td>90</td>
<td>90</td>
</tr>
</tbody>
</table>

**Adapted Grade Level**

- 3rd Grade
- 4th Grade
- 5th Grade
- 6th Grade
- 7th Grade
- 8th Grade

**Notes:** The grade level may be influenced by the child's overall academic performance and individual learning style. They may not be the same.

### I. SYLLABLE LEVELS

**Basic Syllable Level (I):** Two syllables or less, including CVC (e.g., cat, mat, hat), and CV (e.g., at, in)

**Level I:** Say syllables correctly, and don't say any.

- Diphthong: I am a /ai/ /ay/ /ayi/ (e.g., play)
- CVC: I am a /at/ /et/ /ot/ /ut/ (e.g., cat)
- CV: I am a /at/ (e.g., at)

**Level II:** Say syllables correctly, and don't say any.

- Diphthong: I am a /ai/ /ay/ /ayi/ (e.g., play)
- CVC: I am a /at/ /et/ /ot/ /ut/ (e.g., cat)
- CV: I am a /at/ (e.g., at)

**Level III:** Say syllables correctly, and don't say any.

- Diphthong: I am a /ai/ /ay/ /ayi/ (e.g., play)
- CVC: I am a /at/ /et/ /ot/ /ut/ (e.g., cat)
- CV: I am a /at/ (e.g., at)

**Basic Syllable Total:** 90

### II. ONSET-RHIME LEVELS

**Onset-Rhyme Level (I):** One to two years old

**Level I:** Say syllables correctly, and don't say any.

- Diphthong: I am a /ai/ /ay/ /ayi/ (e.g., play)
- CVC: I am a /at/ /et/ /ot/ /ut/ (e.g., cat)
- CV: I am a /at/ (e.g., at)

**Level II:** Say syllables correctly, and don't say any.

- Diphthong: I am a /ai/ /ay/ /ayi/ (e.g., play)
- CVC: I am a /at/ /et/ /ot/ /ut/ (e.g., cat)
- CV: I am a /at/ (e.g., at)

**Level III:** Say syllables correctly, and don't say any.

- Diphthong: I am a /ai/ /ay/ /ayi/ (e.g., play)
- CVC: I am a /at/ /et/ /ot/ /ut/ (e.g., cat)
- CV: I am a /at/ (e.g., at)

**Onset-Rhyme Total:** 90

### III. PHONEME LEVELS

**Basic Phoneme Level (early in 1st grade)**

**Level I:**

- Diphthong: Say /ai/ /ay/ /ayi/ but don't say /ay/.
- CVC: Say /at/ /et/ /ot/ /ut/ but don't say /et/.
- CV: Say /at/ but don't say /at/.

**Level II:**

- Diphthong: Say /ai/ /ay/ /ayi/ but don't say /ay/.
- CVC: Say /at/ /et/ /ot/ /ut/ but don't say /et/.
- CV: Say /at/ but don't say /at/.

**Level III:**

- Diphthong: Say /ai/ /ay/ /ayi/ but don't say /ay/.
- CVC: Say /at/ /et/ /ot/ /ut/ but don't say /et/.
- CV: Say /at/ but don't say /at/.

**Basic Phoneme Total:** 90

**Advanced Phoneme Level (early in 2nd grade)**

**Level I:**

- Diphthong: Say /ai/ /ay/ /ayi/ but don't say /ay/.
- CVC: Say /at/ /et/ /ot/ /ut/ but don't say /et/.
- CV: Say /at/ but don't say /at/.

**Level II:**

- Diphthong: Say /ai/ /ay/ /ayi/ but don't say /ay/.
- CVC: Say /at/ /et/ /ot/ /ut/ but don't say /et/.
- CV: Say /at/ but don't say /at/.

**Level III:**

- Diphthong: Say /ai/ /ay/ /ayi/ but don't say /ay/.
- CVC: Say /at/ /et/ /ot/ /ut/ but don't say /et/.
- CV: Say /at/ but don't say /at/.

**Advanced Phoneme Total:** 90
Appendix E4

Kindergarten Daily Language Warm-Up (KDLWU)

Kindergarten Pretest/Post Test

This should be done out loud with the teacher/SLP

Name ___________________________ Date: _________________

1. State a word that rhymes with these words:
   cat ___ pop ___ sip ___ jet ___ cup ___

2. Tell me if these two words rhyme:
   dog-log ___ hat-car ___
   bug-rug ___ pen-tan ___

3. Tell me a sentence using these words:
   apple: ____________________________________________
   car: ____________________________________________
   swim: ____________________________________________

4. Tell me what category these items belong to:
   carrots, celery, lettuce ______________
   shorts, t-shirt, coat ______________

5. Tell me three things that belong to these categories:
   fruits: __________, __________, __________
   sports: __________, __________, __________

6. Tell me the opposites of these words:
   in: _______ open: _______ on: _______
   up: _______ top: _______ happy: _______

7. Finish these sentences:
   I have one apple. She has three _______.
   I have one cup. He has three _______.
   I have one dog. They have two _______.

8. Tell me how many syllables are in these words:
   hot ___ calendar ___ July ___ pop ___ penguin ___