Building Better Teams: Impact of Education And Coaching Intervention on Interprofessional Collaboration Between Teachers and Occupational Therapists in Schools

Zahava L. Friedman, Kurt Hubbard & Francine Seruya

Published online: 11 Feb 2022.

Submit your article to this journal ⬚

View related articles ⬚

View Crossmark data ⬚

Taylor & Francis
Taylor & Francis Group

Check for updates

Building Better Teams: Impact of Education And Coaching Intervention on Interprofessional Collaboration Between Teachers and Occupational Therapists in Schools

Zahava L. Friedman [a], Kurt Hubbard [b], and Francine Seruya[c]

aDepartment of Occupational Therapy, Kean University, Hillside, New Jersey, USA; bDirector of OT Hybrid Education at Evidence In Motion (EIM), Herzing University Orlando, Florida, USA; cDepartment of Occupational Therapy, Mercy College, New York, USA

ABSTRACT

Most American school-based occupational therapy (SBOT) practitioners do not report utilizing research-supported collaborative models of therapy (Gallagher & Richards, 2020). The purpose of this quantitative, quasi-experimental study was to determine whether a 4-month-long training and coaching program could improve interprofessional collaboration skills, measured by pre- and post-self-scoring. Training and coaching content built upon theoretical foundations of Universal Design for Learning, where learning is intentionally designed to maximize access for all learners, and Distributed Cognition, where each group member contributes unique knowledge to the team. Interprofessional collaboration was operationalized into three discrete skills: communication, role perception, and conflict resolution. Research questions investigated whether training and coaching strategies could improve communication, role perception, and conflict resolution, measured by improved posttest scores. Sample consisted of 27 pairs of school-based occupational therapists and classroom teachers from central New Jersey. For data analysis, sum for each item pre and post was calculated then classified by variable. Paired-sample t-test determined whether sums showed significant differences. For communication, role perception, and conflict resolution, the paired sample t-test analysis revealed significance at .000. Participants' self-reported scores showed statistically significant increase on all three variables. Overall, this study provided a precedent for potential effectiveness of longer-term training/coaching sequences to improve interprofessional collaboration for occupational therapists and teachers in school-based settings.

Introduction

Background: Occupational Therapy and Collaboration in American Schools

In America, per the 2019 AOTA Workforce and Salary Survey, 18.8% of occupational therapists and 15.4% of occupational therapy assistants service children in school-based settings (AOTA, 2020a). School-based occupational therapy (SBOT) in America is guided by federal law, in addition to constructs from the OT Practice Framework, or OTPF (American Occupational Therapy Association, 2020b). In the United States, Individuals

with Disabilities Education Improvement Act (IDEA) of 2004 is a federal law mandating that children with disabilities receive a "free and appropriate public education." This law and its corollaries guide occupational therapy practice in school-based settings throughout the United States (Bissell & Cermak, 2015). Under this law, eligible children can receive an Individualized Education Plan (IEP), a customized, detailed, legally-binding document. Typically, occupational therapy is considered a related service, mandated within a student's IEP, if deemed appropriate (Clark et al., 2017; Goodrich, 2013).

By law, the IEP team determines hether occupational therapy is necessary to support a child's attainment of educational goals (IDEA, 2004). Per the American Occupational Therapy Association (AOTA), the role of the SBOT practitioner is to assist children toward greater participation in daily occupations at school (Clark et al., 2017). Overall, supporting student educational goals in the context of school-based participation often requires a high degree of embedded, natural environment service delivery, built on interprofessional collaboration among team members (Frolek Clark & Polichino, 2021; Kramer-Roy et al., 2020). Interprofessional collaboration, defined as when two or more professions cooperate for shared aims, incorporates a multi-tiered set of Interprofessional Core Competencies (Green & Johnson, 2015). These competencies include: (1) Shared Values/Respect, (2) Clear Role Delineation, (3) Responsible Communication, and (4) Team Dynamics (Interprofessional Education Collaborative, 2016). The Interprofessional Core Competencies framework is helpful in understanding, where interprofessional interactions may be lacking, potentially leading to mechanisms for systemic improvement.

With regard to SBOT, emerging evidence, as reported by school-based staff, indicates that interprofessional collaboration does occur and is viewed as valuable by both teachers and therapists (Edick, 2021; Gallagher et al., 2020; Orentlicher, Lashinsky, Teixeira, & Mograby, 2019). At the same time, poor role understanding and/or inconsistent communication avenues impact effectiveness of these collaborative experiences (Bradley, Hassett, Mazza, & Abraham, 2020; Watt, Richards, Woolley, Price, & Gray, 2021). Reported tensions due to decreased time for effective communication ultimately decreases perceived SBOT value, impacting both the first competency of Shared Values/Respect and the third competency of Responsible Communication (Benson, Szucs, & Mejasic, 2016; Interprofessional Educational Collaborative, 2016). Clear Role Delineation, as the second collaborative competency, is a vital pillar supporting collaborative practices, yet decreased understanding of the role of SBOT acts as a barrier to this collaboration (Bolton & Plattner, 2020; Interprofessional Educational Collaborative, 2016; Tracy-Bronson, Causton, & MacLeod, 2019). An understanding of Team Dynamics (fourth core competency) is necessary to navigate group professional interactions/conflicts in SBOT, yet evidence indicates tensions among school-based staff due to logistical, interpersonal, or professional conflict (Barnes & Turner, 2001; Interprofessional Educational Collaborative, 2016; Wintle, Krupa, Cramm, & DeLuca, 2017).

Although public law and published documents have delineated the role of SBOT, stakeholders within the school system, and even SBOT practitioners themselves reportedly perceive the specific role of the SBOT practitioner as imprecise and vague (Bolton & Plattner, 2020; Caie & Brooks, 2021; Lamash & Fogel, 2021). An occupational therapist entering a school environment must internalize a personal shift, a change in ideation, to truly collaborate with a variety of staff within this setting (Ball, 2018; Laverdure, Seruya, Stephenson, & Cosbey, 2016; Phelan & Ng, 2015; Seruya & Garfinkel, 2018; Stephenson,

Laverdure, Seruya, & Cosbey, 2017). Effective provision of services in schools is highly dependent upon the practitioner's ability to both collaborate interprofessionally *and* understand/plan for the provision of services in the Least Restrictive Environment, per IDEA (IDEA, 2004; Rose & Seruya, 2020).

The connection between understanding education law and SBOT role delineation for effective interprofessional collaboration is revealed in the following research. In a national survey of 276 occupational therapy school-based practitioners, roughly two thirds of respondents reported less-than-adequate knowledge of education law (Cahill, McGuire, Krumdick, & Lee, 2014). In the same survey, more than 50% of practitioners felt that OT involvement in school initiatives were limited, due to decreased educator understanding of the role or scope of occupational therapy. While more recent research demonstrates a higher degree of collaboration between occupational therapists and school-based staff, barriers remain impeding this process, including poor administrative support/understanding, lack of time, and decreased collaborative skill (Clough, 2019; Corley, 2021; Orentlicher, 2019). Therefore, despite extensive clinical training in areas that are vital and applicable to school-age clients, the skill base of occupational therapists working in schools is often left underutilized (Clough, 2019; Grajo & Candler, 2016).

The confusion regarding the role of SBOT is frequently linked to the model of practice utilized by therapists working in schools. While the American Occupational Therapy Association strongly recommends collaborative, integrated SBOT practice, the most common model of SBOT continues to be a remedial, direct service approach (Benson, 2013; Corley, 2021; Gallagher & Richards, 2020; Schefkind & Carroll, 2015; Seruya & Garfinkel, 2020). Similarly, in a survey of SBOT practitioners, Spencer, Turkett, Vaughan, and Koenig (2006) found that therapists utilized a pull-out (of the classroom) approach 61% of the time, with remedial-type approaches 62% of the time. Barnes and Turner (2001) reported only 15% of SBOT practitioners were able to schedule regular collaborative meetings with teachers. In a recent study of middle-school occupational therapists, more than 75% of therapists reported continuing to provide direct individual interventions outside the natural classroom setting (Rodrigues & Seruya, 2019). This knowledge-to-practice gap is concerning, undermining evidence-based practice/role perception for school-based occupational therapists (Bose & Hinojosa, 2008; Laverdure, 2011, 2014; Seruya & Garfinkel, 2020). American occupational therapists are certainly not alone in their struggle to implement integrative school-based therapy models, as researchers from England, Ireland, and Malaysia have also reported on the need for a more collaborative and integrated approach to SBOT (Caie & Brooks, 2021; Hutton, Tuppeny, & Hasselbusch, 2016; Kadar, Razaob, Saibani, Chui, & Samin, 2017; O'Donoghue, O'Leary, & Lynch, 2021).

The caseload-based approach, while prevalent in America, has been explored and supplanted for a workload-based approach in many other areas across the globe, including in Canada, South Africa, and Australia (Camden et al., 2021; Hargreaves, Nakhooda, Mottay, & Subramoney, 2012; Kessler & Graham, 2015; Steinhoff, 2015; Wilson & Harris, 2018). One alternative, population-based approach was developed by an occupational therapy research team at McMaster University, in Ontario, Canada, titled Partnering For Change, or P4C (Missiuna et al., 2015; Villeneuve & Hutchinson, 2015; Villeneuve & Shulha, 2012). The primary goal of the Ontario-based P4C initiative was to build teacher capacity, through collaboration and coaching by occupational therapists, in the natural context of the teacher and child (Missiuna et al., 2012; Pollock, Dix, Whalen, Campbell, &

Missiuna, 2017). Building educator capacity resulted in overall increased awareness, earlier identification, and better therapy outcomes (Campbell, Camden, & Missiuna, 2016). Furthermore, recent follow-up and replication studies on this intentional collaborative model indicate teacher appreciation of responsive support from occupational therapists (Camden et al., 2021; Wilson & Harris, 2018). Although evidence has strongly supported natural environment teaching in occupational therapy, implementing a collaborative and integrated approach to SBOT has remained a challenge in America (Cahill & Beisbier, 2020; Rose & Seruya, 2020).

In terms of qualitative research, perception studies revealed several obstacles impeding collaboration in SBOT. These barriers include high caseload number, scheduling difficulties, and role perception deficits (Benson, 2013; Benson et al., 2016; Corley, 2021; Garfinkel & Seruya, 2016, 2018, 2020). Decreased role perception of occupational therapists in school-based settings significantly impedes the ability of therapists to operate within their full scope of training and practice (Artale-Morgante & Seruya, 2017; Lamash & Fogel, 2021). Educators, administrators, parents, and even SBOT practitioners themselves express confusion regarding role and scope of practice in schools (Benson et al., 2016; Bolton & Plattner, 2020; Selanikyo, Yalon-Chamovitz, & Weintraub, 2016; Truong & Hodgetts, 2017). Relationship with a child's classroom teacher is, perhaps, the most vital for the SBOT practitioner, though building and maintaining this rapport is notoriously challenging (Benson et al., 2016; Blackwell & Dunn, 2016; Casillas, 2010a, 2010b; Gallagher & Richards, 2020; Wintle et al., 2017; Wintle, Krupa, DeLuca, & Cramm, 2021). Educators who are exposed to a greater understanding of the potentialities of SBOT express clarity and stronger preference for collaborative, integrated practice (Camden et al., 2021; Christner, 2015; Orentlicher et al., 2019).

For school-based occupational therapists, it is necessary to understand the primary role of the teacher as a change agent within educational settings (Vaz et al., 2015). In research on teacher perception regarding value of SBOT, the majority of educators expressed a desire for increased occupational therapist interaction, while acknowledging time/dedication required for collaborative relationships (Camden et al., 2021; Christner, 2015; Edick, 2021). One naturally occurring opportunity for collaboration is during the development of a student's Individualized Education Plan (IEP), outlining progress, needs, and goals for the coming educational year (Musyoka & Clark, 2015; Orentlicher et al., 2019). By carefully collaborating on these goals, while engaging in active listening, SBOT practitioners can resolve differences of opinion regarding goal appropriateness and prioritization, gaining clarity on each teacher's viewpoint, style, and educational focus (Schefkind & Carroll, 2015).

Over the past few years, an emerging body of research demonstrates the potential effectiveness of teacher-occupational therapist collaborative relationships. A consultative/collaborative model has strong evidence when utilized as a Tier 1 Response to Intervention (RtI) initiative (Bazyk et al., 2009; Case-Smith, Holland, Lane, & White, 2012; Martino & Lape, 2021; Ohl et al., 2013; Zylstra & Pfeiffer, 2016). One area with a growing body of research is the study of occupational therapist- and teacher-led handwriting initiatives within the classroom, which teachers report a preference for (Patton, Hutton, & MacCobb, 2015; Rens & Joosten, 2014). As a whole, these studies demonstrate potential improvement through consultation and collaboration alone, as opposed to more costly, time consuming and isolating direct-therapy delivery models (Erhardt & Meade, 2005; Frolek Clark & Polichino, 2021).

The majority of previous research regarding interprofessional collaboration between educators and SBOT practitioners has been qualitative in nature (Benson et al., 2016; Christner, 2015; Leigers, Myers, & Schneck, 2016; Musyoka & Clark, 2015; Vaz et al., 2015). There were also several studies focusing on therapist perception of SBOT practice (Cahill et al., 2014; Caie & Brooks, 2021; Cramm & Egan, 2015; Johnson et al., 2017; Nielsen & Hektner, 2014; Szucs, Benson, & Corturillo, 2016). Several quantitative-design studies aimed at demonstrating the effectiveness of specified whole-class or consultative SBOT initiatives, including specific curricular areas of handwriting instruction and sensorimotor function within the classroom (Blackwell, Yeager, Mische-Lawson, Bird, & Cook, 2014; Case-Smith et al., 2012; Ohl et al., 2013; Zylstra & Pfeiffer, 2016). These studies recommended implementing/assessing collaborative school-based training, as an area ripe for future research (Blackwell et al., 2014; Case-Smith et al., 2012).

Finally, interprofessional collaborative abilities consistently cited as lacking in school-based staff within the literature, include the skills of communication, role perception, and conflict resolution (Ball, 2018; Benson, 2013; Blackwell et al., 2016; Bose & Hinojosa, 2008; Corley, 2021; Holt, Kuperstein, & Effgen, 2015). Communication/role perception/conflict resolution are conceptually connected to four (4) interprofessional collaborative competencies: respect, communication, role delineation, and team dynamics, foundational aptitudes to build an interprofessional SBOT model of practice (Interprofessional Educational Collaborative, 2016).

While the literature is exhaustive on contributions exploring decreased educator–therapist collaboration, few studies have actively evaluated potentially effective strategies to *improve* upon this collaboration (Blackwell et al., 2014; Christner, 2015; Donica, 2015; Miller-Kuhaneck & Watling, 2018; Pratt, 2014; Wintle et al., 2021). Because the educator–therapist relationship is pivotal, actively training dyads of educators and occupational therapists in interprofessional collaboration skills may be particularly impactful in school-based settings (Benson, 2013; Benson, Elkin, Wechsler, & Byrd, 2015; Edick et al., 2021; MacCobb et al., 2014; Missiuna et al., 2015; Truong & Hodgetts, 2017). The majority of existing research on the subject has been exploratory or qualitative in nature, while this study addressed the gap cited in many articles, namely, the described need to train educator/therapist shareholders to *improve* school-based communication and collaboration.

In this quantitative quasi-experimental study, the training-coaching intervention sequence served as the independent variable (IV). The dependent variables (DV) were identified as the three skill components of interprofessional collaboration (communication, role perception, and conflict resolution). The three research questions, therefore, focused on potential increase or change in ICCAS scores (DV), following the four-month long training and coaching sequence (IV). The research questions were designed as follows:

RQ1 To what extent can social communication and interprofessional training and coaching strategies improve communication (DV1), as measured by improved ICCAS scores.

RQ2 To what extent can social communication and interprofessional training and coaching strategies improve role perception (DV2), as measured by improved ICCAS scores?

RQ3 To what extent can social communication and interprofessional training and coaching strategies improve conflict resolution (DV3), as measured by improved ICCAS scores?

Materials and Methods

Participants

In this study, 32 pairs of occupational therapists and educators from central New Jersey were recruited (n = 64), utilizing a random sampling method. Inclusion criteria for "educator" was defined as licensed, full-time classroom-based instructor with a minimum of 1-year teaching experience. Inclusion criteria for "occupational therapist" was a person with 1 year of full-time experience as a pediatric occupational therapist in a school-based or non-school-based/related pediatric setting.

Minimum sample size was initially determined via utilization of open software, G Power 3.1, a well-regarded, simple yet rigorous program utilized to determine appropriate sample sizing for studies utilizing specified statistical methodologies (Faul, Erdfelder, & Buchner, 2007). For G* Power a priori analysis, effect size was set at .5, power level .8, and alpha at .05. G Power 3.1 revealed a minimum sample of n = 27 (27 dyads, 54 participants) with an additional five dyads included in the study to maintain statistical power while allowing for a dropout rate consistent with that seen in previous studies (Lane, 2008). This study initially included a random selection of 64 participants, namely, 32 occupational therapists and 32 educators. Study drop-out resulted in a total of 27 dyads, maintaining initial minimum requirements per G Power analysis.

A rigorous attempt was made to contact as many SBOT practitioners throughout the state of New Jersey as possible. Participants were randomly selected from the full group of interested respondents. Recruitment commenced upon IRB approval in October, 2018. All participants had the opportunity to review and sign Informed Consent procedures prior to study participation, in the fall of 2018, and to leave the study at any point, should they wish to do so. Participants were recruited from the suburban Ocean, Monmouth, Mercer and Middlesex county suburban areas, and were all working in private or public school-based settings.

Due to feasibility, it was necessary to roll out the initial full-day of training in three cohorts. The following table, Table 1, illustrates cohort timeline.

Measures

For this quantitative, quasi-experimental study, scores on the Interprofessional Collaborative Competencies Attainment Survey (ICCAS) were utilized as the primary source of data. The ICCAS, a quantitative self-assessment tool for interprofessional education (IPE) participants, was originally written by a team of researchers out of the University of Ottawa in Canada (MacDonald et al., 2010). ICCAS is a 20-item self-survey of

Table 1. Timeline for recruitment and treatment implementation by cohort.

Cohort	Recruitment	Total Participants	Pretest and Training	Coaching Sessions	Posttest and Reflection
First	October, 2018	34, n = 17 dyads	October, 2018	November, December, 2018	January, 2019
Second	October and November, 2018	8, n = 4 dyads	November, 2018	December, 2018-January, 2019	February, 2019
Third	October and November, 2018	12, n = 6 dyads	November, 2018	December,, 2018-January, 2019	February, 2019

interprofessional collaborative skills across six areas (Archibald, Trumpower, & MacDonald, 2014). These areas are Communication (5 questions), Collaboration (3 questions), Roles and Responsibilities (4 questions), Collaborative Patient/Family-Centered Approach (3 questions), Conflict Management/Resolution (3 questions), and Team Functioning (2 questions). In terms of the survey's design and usage, each item can be scored on a 7-point numbered, ordinal scale, ranging from strongly agree (1) to strongly disagree (7), with an NA = not applicable designation provided in the survey key as well.

In studies evaluating the parametric components of the ICCAS, evidence indicates that internal consistency is high for both individual questions, specified areas, and for overall pre-post scoring, with Cronbach's alpha reported at the .94 to .98 range, (Archibald et al., 2014). Permission to utilize the ICCAS in this study was obtained via written e-mail correspondence between this researcher and the primary tool developer (first author, Dr. Douglas Archibald) on February 11, 2018, provided the instrument would be properly referenced within the study.

This study's utilization of the ICCAS as a data collection instrument was built upon the previous evidence of ICCAS's reliability and validity, when utilized in conjunction with interprofessional education initiatives (Archibald et al., 2014; King et al., 2016; MacKenzie et al., 2017; Schwindt et al., 2017). In a recent study, the ICCAS was utilized as a pre-and posttest data collection instrument to assess improvement in interprofessional collaboration among physical therapy doctoral and associate's level students (Duff & Dower, 2021). This was consistent with a report by Jackson (2017) outlining the positive potentialities of utilizing the ICCAS in a pre- and posttest design, scored in two different instances, as opposed to its traditional use as a retrospective instrument, scored twice in one sitting.

Construct validity, as defined by Drost (2011) is at the crux of research, whereby researchers operationalize and concretely address and connect the research question to methodology. Previous education and therapy literature review indicated three discrete, yet interrelated, subsets of skill with regard to school-based interprofessional collaboration: *communication, role perception*, and *conflict resolution* (Ng et al., 2015; Patton et al., 2015; Pratt, 2014). Consequently, this study's research questions have reflected the tri-pronged nature of interprofessional collaboration, with each question addressing a specified skill area. Furthermore, careful inspection of the ICCAS reveals clear referencing of those three aforementioned skill areas, indicating potentially strong validity and connection between this study's research question and data collection methodology. This analysis of previous literature, in conjunction with analysis of ICCAS questions and section, demonstrates a degree of congruence between how interprofessional collaboration is existentially defined. In terms of instrumentation of specified study variables, 11 ICCAS questions are specifically related to interprofessional communication ability (1–8, 13–15), with four questions addressing role perception (questions 9–12) and five questions regarding conflict resolution (16–20) (MacDonald et al.).

In this study, at the onset of the initial training, participants completed the initial ICCAS survey. All pre- and posttests were coded according to each individual participant, to maintain privacy and confidentiality. Following survey completion, all participants received a full day training and two coaching sessions. At the study's conclusion, a final full-day training was scheduled and attended by participants. At this final training, participants completed the follow-up, repeat ICCAS survey, utilizing a link to Survey Monkey, on their own device or on a device provided to them by this researcher.

For the purpose of training and coaching, the Universal Design for Learning (UDL) framework was utilized, to enable participants to become familiar with actively designing educational curricula that flexibly meet the needs of all learners (Missiuna et al., 2012b). Intentionally including UDL components in the coaching effort ensured that training was aligned with current educational best practice (Cahill & Lopez-Reyna, 2013). Furthermore, a secondary framework, the theory of Distributed Cognition (DC) was included as well, to help participants understand the role of shared knowledge in team building within educational settings (Villeneuve, 2009). DC is at the core of team-based practice, as it is based upon the idea that each individual's knowledge is a necessary contribution, in order to solve the complex problems of a group (Rogers & Ellis, 1994). Finally, incorporating a seamless merging of both Universal Design for Learning and Distributed Cognition frameworks into the training and coaching sequence was an intentional choice made by the researcher, to allow for complex, creative problem solving within the dyads (Missiuna et al., 2017).

To maintain study consistency, all initial and final trainings were completed by the primary researcher, and included both theory and practice. These trainings incorporated theoretical foundations and explanation of the research-to-practice gap driving this study. The training also included practical components of defining, practicing, and engaging in each of the three skills of interprofessional collaboration, as measured in the ICCAS. Review of evidence-based practices, role play, and historical perspective were all covered. The next table, Table 2, includes content summary of the training and coaching portions of this study.

Participants were then instructed to provide to the researcher several feasible dates for coaching, in each of the following 2 months. Coaching sessions followed a generally consistent outline. In these sessions, participants reviewed each of the three skills of interprofessional collaboration, while providing personal examples of challenges and successes in each area that had occurred within the past month. Coaching sessions were provided to each dyad, with certain dyads scheduled in small groups together for coaching sessions.

For each cohort, once all participants had completed both coaching sessions, a final day of training and reflection was scheduled. For the final reflection, the outline from initial training was utilized, as participants utilized their time to share, reflect upon, and analyze

Table 2. Content summary-interprofessional training/education and coaching sequence.

Topic and Timeline	Outline of Skills Covered	Data Collection
Month 1- Pretest and full-day Training/Education	Universal Design for Learning; Distributed Cognition; History of school-based occupational therapy practice; definitions of collaboration, role perception, conflict resolution; practice activities for collaboration; role play for role delineation; simulated conflict resolution exercises.	ICCAS pretest completion
Month 2-First Coaching Session (45 minutes-1 hour)	Coach dyad(s) with questions eliciting specific experiences, including: Please share successes/challenges re: collaboration, role perception, conflict resolution in the past month.	
Month 3-Second Coaching Session (45 minutes-1 hour)	Review and probe with follow-up questions re: individual dyad sharings from First Coaching Session. Continue to coach dyads with questions eliciting specific experiences, including: Please share successes/challenges re: collaboration, role perception, conflict resolution in the past month.	
Month 4- Posttest and full-day Reflection/Education	Reflection on successful strategies of communication, role perception, conflict resolution; sharing of challenges and barriers; sharing of suggestions/implications; reflections on growth and team building.	ICCAS post- test completion

Table 3. Descriptive statistics by variable.

		Mean	Number of Test Items	Std. Deviation	Std. Error Mean
Variable 1	Communication Pretest	226.82	11	17.72	5.34
	Communication Posttest	328.82	11	17.38	5.24
Variable 2	Role Perception Pretest	230.75	4	6.18	3.09
	Role Perception Posttest	345.50	4	6.45	3.23
Variable 3	Conflict Resolution Pre-Test	236.80	5	16.93	7.57
				10.47	4.68
	Conflict Resolution Posttest	338.80	5		

personal school-based situations that had presented a challenge and/or contributed to personal self-perceived growth. Following the reflection, participants completed the ICCAS once more, with ensuing scores serving as the posttest for this study. The study's data collection was complete once all 54 participants (27 teachers and 27 occupational therapists) from all three cohorts, completed this posttest.

Analysis

This study utilized a paired sample t-test to analyze the differences between the sums of pre- and posttest scores of participants on the ICCAS. Both pretest and posttest were identical in terms of content and question sequence. All ICCAS surveys were completed on Survey Monkey, either on the device of the participant, or on a device provided by the primary researcher on initial and final days of the training–coaching sequence. For data analysis purposes, the scores of all participants were tabulated on Microsoft Excel, and sums were calculated on an ICCAS item-by-item basis.

The next table, Table 3, presents the overall pretest and posttest sum and descriptive statistics for each overall variable.

Results

To meet the assumption for normal distribution of the data set (to perform the paired-sample t-test), the Shapiro–Wilk test, a test of normality, was performed, for which the null hypothesis is that the data are normally distributed. On the Shapiro–Wilk test, when p values fall above .05, the null hypothesis for test of normality is accepted, with the data set found to be normally distributed. Conversely, when p values on the Shapiro–Wilk test fall below .05, the null hypothesis for normality is rejected, with the data set *not* found to be normally distributed. Results of the Shapiro–Wilk test on this data set, for all pre- and posttest score sums are illustrated in Table 4.

Table 4. Shapiro-wilk test of normality.

	Shapiro-Wilk p value
Communication Pretest	.903
Communication Posttest	.850
Role Perception Pretest	.259
Role Perception Posttest	.090
Conflict Resolution Pretest	.307
Conflict Resolution Posttest	.373

Table 5. Paired samples t-test, communication.

	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper	t	Df	Sig. (2-tailed)
Variable 1 Communication pre-post	−102.0	13.32	4.02	−110.95	−93.05	−25.4	10	.000

Table 6. Paired samples t-test, role perception.

	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper	t	Df	Sig. (2-tailed)
Variable 2 Role Perception pre-post	−114.75	7.411	3.71	−126.54	−102.9	−30.9	3	.000

Table 7. Paired samples t-test, conflict resolution.

	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper	T	Df	Sig. (2-tailed)
Variable 3 Conflict Resolution pre-post	−102.0	11.77	5.26	−116.61	−87.38	−19.3	4	.000

In short, because all p values fell above .05, the null hypothesis for the Shapiro–Wilk test of normality was accepted, and the data set was found to be normally distributed.

Following this, inferential analysis was completed, in the form of a paired-sample t-test. The first research question addressed the first variable of interprofessional collaboration, communication. Table 5 illustrates results of this paired t-test analysis.

For the variable of communication, the participants' scores were statistically significantly higher for the posttest (M-post = 328.82, SD = 17.72) than for the pretest (M-pre = 226.82, SD = 17.38) t (10) = −25.4, p = .000.

The second research question addressed the second variable of interprofessional collaboration, role perception. Table 6 illustrates results of this paired t-test analysis.

For the variable of role perception, the participants' scores were statistically significantly higher for the posttest (M-post = 345.50, SD = 6.45) than for the pretest (M-pre = 230.75, SD = 6.185) t (3) = −30.9, p = .000.

The third research question addressed the third variable of interprofessional collaboration, conflict resolution. Table 7 illustrates results of this paired t-test analysis.

For the variable of conflict resolution, the participants' scores were statistically significantly higher for the posttest (M-post = 338.80, SD = 10.47) than for the pretest (M -pre = 236.80, SD = 16.93) t (4) = −19.3, p = .000.

As a result of the paired sample t-test performed on each of the three variables, all three alternate hypotheses were accepted. Therefore, one can conclude from the inferential statistical analysis that a 4-month long training and coaching sequence on interprofessional collaboration resulted in higher self-reported scores on ICCAS survey items pertaining to the three variables in this study.

Discussion

The purpose of this quantitative, quasi-experimental study, was to examine, via pretest and posttest scoring, whether participants of a 4-month long interprofessional collaboration training and coaching sequence, would improve in self-reported collaborative abilities. The majority of previous research on interprofessional collaboration among teachers and occupational therapists in schools examined this topic qualitatively, without investigating potential methods of improvement or change (Bolton & Plattner, 2020; Bose & Hinojosa, 2008; Dahl-Popolizio, Rogers, Muir, Carroll, & Manson, 2017; Wilson & Harris, 2018; Yardley, 2000). This study addressed several research gaps identified in SBOT literature, as it utilized both a quantitative, quasi-experimental design, and a unique sample pattern: team/dyad as subjects (in this case, pairs of teachers and occupational therapists). In addition, a long-term training–coaching sequence addressed the longer-term coaching/ training opportunities recommended in previous studies, though not widely utilized (Miller-Kuhaneck & Watling, 2018; Missiuna et al., 2012; Pollock et al., 2017). This study's results have important implications, specifically, for the field of SBOT practice, and generally, for educators in school-based settings, highlighting practical methods of improving team-based dynamics and interprofessional collaboration in these settings.

Essentially, it was concluded that a 4-month-long training/coaching sequence (independent variable) improved self-reported skills (dependent variables) of communication, role perception, and conflict resolution, as indicated by statistically significant increases in ICCAS scores. These results demonstrated that an ongoing training/coaching initiative brought about statistically significant improvements in self-reported skills of interprofessional collaboration. Researcher's notes, personal memos, and reflections on the education/ training and coaching sequence revealed the following. In terms of change, not only did teachers report improved communication in the survey, but the consistency and quality of communication within the dyads was notably different at the study's conclusion. While each teacher–occupational therapist pair worked together, most had not reported weekly habits of communication via e-mail, phone, or in person. At the end of the study, all pairs had exchanged cell numbers within the dyads, and the amount of shared language/knowledge increased. In the beginning of the coaching sequence, the communication challenges shared were more basic, as pairs described forgetting to notify each other of schedule changes or upcoming meetings, impacting therapy/educational opportunities. Towards the end of the coaching period, the dyads learned to communicate most of the basic, logistical aspects of their work, and communication difficulties were more nuanced, such as forgetting to share an important goal attainment episode related to a student.

Role perception and role understanding was the most marked change in participants, both in the survey and in observations from the coaching sessions. At the onset of the study, teachers generally described the role of their occupational therapist colleague as the fine-motor-handwriting or sensory specialist in the school. Sometimes, even if there was a preexisting friendship between the teacher and occupational therapist, the teacher struggled to describe in one, coherent sentence, the role of their good friend as the school-based occupational therapist. Occupational therapists, though eager to work with teachers, had difficulty describing the curricular goals, schedule shifts, and classroom dynamics that teachers experienced.

At the end of the study both teachers and occupational therapists showed deeper understanding of their own and each others' roles. Occupational therapists showed stronger ability to clearly articulate participation, occupation, and engagement as within their school-based scope of practice, while appreciating the complexity inherent in classroom teaching (American Occupational Therapy Association, 2020a). Teachers also began asking more broad questions from the occupational therapists, such as questions on how to teach a child to remember colors, strategies for teaching lining up math problems, and social-emotional challenges in their students. There were many "aha" moments, where both teachers and occupational therapists realized they could ask their partner for strategies, and then generalize these ideas in other situations or to help other children. In this way, utilizing the Distributed Cognition framework to frame and teach collaboration allowed for shared knowledge, an understanding of individual roles, and a flexible fluidity regarding knowledge that raised the level of skill for each dyad (Villeneuve, 2009).

Conflict resolution, as the third variable, was an area that required the most emotional labor from both researcher and participants. At the onset of the study, when asked about conflict scenarios at work, most participants reported either good interpersonal experiences only, or chose to share very minor disagreements that seemed to simply sort themselves out. By the middle-end of the coaching sequence, participants began to reveal more deeply impactful, and longer term conflicts in their workplace. These conflicts fell typically into one of two categories: (1) "We are not the problem. Our co-worker(s) is/are the problem" category and (2) Need for administrative support to prevent/resolve workplace conflicts. In terms of the first type of conflict reported, more often than not, the conflict discussed involved a person who was not included in the study. In other words, the conflict was more along the lines of, "I wish that ____ (a different co-worker) could participate in this work. She/he/they really need it because this is the conflict we are having with them at work." The second type of conflict was related to larger, systemic difficulty such as administrative disconnect from staff, resulting in perceived-as uneven work distribution, limited avenues for support from management, and general lack of relationship with school leadership. It was interesting to note the amount of time that passed before participants were truly comfortable sharing their most concerning conflicts, and decreased sense of personal agency regarding their own ability to navigate/handle or resolve these conflicts. The complexity and difficulty of conflict resolution training found in this study is consistent with previous literature on conflict resolution in interprofessional education, where constant practice and adaptation of teaching approach have been stated (Vandergoot, Sarris, Kirby, & Ward, 2018; Wolfe, Hoang, & Denniston, 2018).

Programmatically, there are many implications from this study that can inform future interprofessional learning projects. First, the need for an ongoing training–coaching sequence of educator and occupational therapist pairs was particularly useful for building researcher–participant relationships, trust, and as a means of providing longer-term support (Kramer-Roy et al., 2020; Miller-Kuhaneck & Watling, 2018). As previously found, teachers who value collaboration tend to collaborate more with occupational therapists; in addition, more collaboration has been linked to improved client outcomes, underscoring the importance of longer-term training coaching sequences (Orentlicher et al., 2019). Trainings that start and end on the same day, with little/no follow-up, may not incur the same buy-in or engagement from researchers or participants (Kramer-Roy et al., 2020). Second, while many interprofessional studies focus primarily on role delineation and

understanding, the need to address the full group of role competencies was apparent in this study (Interprofessional Educational Collaborative, 2016). Interprofessional collaboration does not simply mean shared role understanding; rather, the need to intentionally focus on relationship-building, shared goals, and teaming/connections at work, while engaging in oft-uncomfortable conflict-related conversations was found in this research and described in previous work (Blackwell et al., 2016; Vandergoot et al., 2018). In addition, some of the more engaged and successful dyads came from a snowball recruitment sample, where the administrator of these participants encouraged several dyads to engage in the study. In this way, as found in the literature, when district or school leadership is supportive and open to change or learning, this can allow for more buy-in and growth in participants (Camden et al., 2021). Furthermore, working at the systemic level can allow for greater university–community partnership building, creating a direct line of contact between researchers/administrators and grassroots-level clinicians and educators (Burgard & Jozwiak, 2020).

Finally, future implications of these results include the potential for improvement on a larger scale, given various options for study replication. This study can be repeated with a larger sample from the Northeast region of the United States and/or from a larger sample from an entirely different region or even from the entire country. Additional researchers and trainers can be recruited as subsequent contributors, to determine whether the actual training can be replicated without this study's primary researcher as the trainer. In an alternative mechanism to program delivery, peer mentoring can be placed at the center of the interprofessional initiative, with much of the coaching occurring within the team, and researcher acting only when support is needed. This is consistent with research supporting a peer-feedback approach as having greater efficacy to a facilitator, or in this case trainer/researcher feedback approach (Harney, Hogan, & Quinn, 2017). In addition to a larger sample, this study can be replicated with other permutations of school-based staff dyads, such as school psychologist–teacher, administrator–teacher, parent–occupational therapist or speech therapist–counselor. Including a variety of professions could also yield interesting results, as far as which dyad structure showed most improvement. As stated, in terms of conflict resolution, the participants opined the staff members, including administrators, who were not participating in the same level of interprofessional collaboration training. If staff from larger school teams are trained to collaborate, clearly articulate their own roles and successfully negotiate conflict, this can improve overall school culture at the systemic level, allowing for fluid problem solving and flexible, inclusive environments.

Limitations

Limitations include unavoidable components of the study that may impact or affect results. The following are limitations of this study:

(1) Random sampling from a local area within New Jersey was utilized in this study for feasibility. However, this also decreased the ability of study results to be generalized, while allowing for possibility of skewing of resulting data (Robinson, 2014).

(2) Existing cultural and social differences are unavoidable and may have impacted study results. Intentional inclusion of social communication techniques in the training and coaching sequences was designed to mitigate potential cultural and personal

differences. At the same time these differences are realistic and may impact the relationship between each educator–occupational therapist dyad and that between researcher and participants (Liu, Keeley, & Buskist, 2015).

(3) The chosen data collection instrument, Interprofessional Collaborative Competencies Assessment Survey, is a self-assessment instrument. Decreased objectivity is a lamentable by-product of instruments with self-assessment components (Robinson, 2014).

(4) Small sample size was necessary to ensure study feasibility, clarity and integrity. At the same time, this decreases generalizability of results and statistical power of the data.

Implications for Occupational Therapy Education And Practice

Including interprofessional collaboration training initiatives at the undergraduate and graduate level, for college students who are training to be future school-based educators and occupational therapists, is strongly recommended. Providing this information at the college training level can be extremely valuable and effective, potentially serving preventative and proactive measures for future school-based staff (Beverly & Wooster, 2018; Fairbairn & Davidson, 1993). When occupational therapists enter school-based settings, they often report having insufficient training specific to these settings, including decreased understanding of their own and others roles (Cahill, Egan, Wallingford, Huber-Lee, & Dessmcguire, 2015; Leigers et al., 2016). Furthermore, working with pediatric populations who require complex coordination of therapy and education, necessitates a team-based approach, where effective communication is key (Sinai-Gavrilov, Gev, Mor-Snir, & Golan, 2019). In this way, occupational therapy students who anticipate servicing school-based children can be exposed to complementary curricular ideas during their college years, to help prepare them for team-interactions in school-based settings.

Overall, this study has particular implications for SBOT practice, as lack of interprofessional collaboration is frequently cited in SBOT literature (Ball, 2018; Benson, 2013; Bose & Hinojosa, 2008; Rose & Seruya, 2020; Young, 2016). Training and coaching initiatives outlined in this study may be helpful for utilization in larger or more diverse groups of educators, as a means of improving collaboration for school-based teams. These initiatives can also be utilized for other shareholders, such as parents, school board members, administrators and support staff, for the same purpose and with the same potential benefits at a more widespread, systemic level. As an ongoing initiative to expand university-community based connections, this study can serve as a template. Methodologies and implications stated here can inform school-based research and the larger school-based community of educators, as current national educational initiatives create the need for intentional training in interprofessional collaboration techniques (Young, Wagenfeld, & Rocker, 2019). Via ongoing training/coaching sequences, occupational therapists can share their distinct value, by contributing to well-conceived contextual spaces per Universal Design for Learning, and by operating in a Distributed Cognition, knowledge-sharing mindset (Flood, Hocking, Smythe, & Jones, 2019; Missiuna et al., 2015; Villeneuve, 2009; Young et al., 2019). Therefore, future research is, perhaps, more important now than ever, to assess whether similar training and

coaching initiatives can have widespread positive impact for larger groups of school-based staff nationwide.

ORCID

Zahava L. Friedman http://orcid.org/0000-0003-3533-3481
Kurt Hubbard http://orcid.org/0000-0003-1950-7736

References

American Occupational Therapy Association. (2020a). *2019 workforce and salary survey.*

American Occupational Therapy Association. (2020b). Occupational therapy practice framework: Domain and process (4th ed.). *American Journal of Occupational Therapy*, *74*(Suppl. 2), 7412410010. doi:10.5014/ajot.2020.74S2001

Archibald, D., Trumpower, D., & MacDonald, C. (2014). Validation of the interprofessional collaborative competency attainment survey (ICCAS). *Journal of Interprofessional Care*, *28*(6), 553–558. doi:10.3109/13561820.2014.917407

Artale-Morgante, M., & Seruya, F. M. (2017). Developing inclusive school communities: An expanded role for school-based occupational therapy. *American Journal of Occupational Therapy*, *71*(4_Supplement_1), 7111515230p1–7111515230p1. doi:10.5014/ajot.2017.71S1-PO3091

Ball, M. A. (2018). Revitalizing the OT role in school-based practice: Promoting success for all students. *Journal of Occupational Therapy, Schools, & Early Intervention*, *11*(3), 263–272. doi:10.1080/19411243.2018.1445059

Barnes, K. J., & Turner, K. D. (2001). Team collaborative practices between teachers and occupational therapists. *American Journal of Occupational Therapy*, *55*(1), 83–89. doi:10.5014/ajot.55.1.83

Bazyk, S., Michaud, P., Goodman, G., Papp, P., Hawkins, E., & Welch, M. A. (2009). Integrating occupational therapy services in a kindergarten curriculum: A look at the outcomes. *American Journal of Occupational Therapy*, *63*(2), 160–171. doi:10.5014/ajot.63.2.160

Benson, J. (2013). School-based occupational therapy practice: Perceptions and realities of current practice and the role of occupation. *Journal of Occupational Therapy, Schools, & Early Intervention*, *6*(2), 165–178. doi:10.1080/19411243.2013.811348

Benson, J. D., Elkin, K., Wechsler, J., & Byrd, L. (2015). Parent perceptions of school-based occupational therapy services. *Journal of Occupational Therapy, Schools, & Early Intervention*, *8*(2), 126–135. doi:10.1080/19411243.2015.1040944

Benson, J. D., Szucs, K. A., & Mejasic, J. J. (2016). Teachers' perceptions of the role of occupational therapist in schools. *Journal of Occupational Therapy, Schools, & Early Intervention*, 9(3), 290–301. doi:10.1080/19411243.2016.1183158

Beverly, B. L., & Wooster, D. (2018). An interprofessional education initiative for allied health students preparing to serve individuals with autism spectrum disorders. *Journal of Allied Health*, 47(2), 90–95.

Bissell, J., & Cermak, S. (2015). Frameworks, models and trends in school-based occupational therapy in the United States. *The Israeli Journal of Occupational Therapy*, 24, E49–E69.

Blackwell, A. L., & Dunn, W. (2016). Active ingredients for an embedded intervention within the early childhood classroom. *Journal of Occupational Therapy, Schools, & Early Intervention*, 9(2), 125–141. doi:10.1080/19411243.2016.1165003

Blackwell, A. L., Yeager, D. C., Mische-Lawson, L., Bird, R. J., & Cook, D. M. (2014). Teaching children self-regulation skills within the early childhood education environment: A feasibility study. *Journal of Occupational Therapy, Schools, & Early Intervention*, 7(3–4), 204–224. doi:10.1080/19411243.2014.966013

Bolton, T., & Plattner, L. (2020). Occupational therapy role in school-based practice: Perspectives from teachers and OTs. *Journal of Occupational Therapy, Schools, & Early Intervention*, 13(2), 136–146. doi:10.1080/19411243.2019.1636749

Bose, P., & Hinojosa, J. (2008). Reported experiences from occupational therapists interacting with teachers in inclusive early childhood classrooms. *American Journal of Occupational Therapy*, 62(3), 289–297. doi:10.5014/ajot.62.3.289

Bradley, E., Hassett, E., Mazza, A., & Abraham, G. (2020). General education teachers' perspectives on collaboration with OTs in the school setting. *American Journal of Occupational Therapy*, 74 (4_Supplement_1), 7411505163p1–7411505163p1. doi:10.5014/ajot.2020.74S1-PO5124

Burgard, K. L., & Jozwiak, M. M. (2020). Reimagining university partnerships with local schools in the United States. *Oxford Research Encyclopedia of Education* https://doi.org/10.1093/acrefore/9780190264093.013.1627 .

Cahill, S. M., & Beisbier, S. (2020). Occupational therapy practice guidelines for children and youth ages 5–21 years. *American Journal of Occupational Therapy*, 74(4), 7404397010p1–7404397010p48. doi:10.5014/ajot.2020.744001

Cahill, S. M., Egan, B. E., Wallingford, M., Huber-Lee, C., & Dess-mcguire, M. (2015). Results of a school-based evidence-based practice initiative. *American Journal of Occupational Therapy*, 69(2), 6902220010p1–6902220010p5. doi:10.5014/ajot.2015.014597

Cahill, S. M., & Lopez-Reyna, N. (2013). Expanding school-based problem-solving teams to include occupational therapists. *Journal of Occupational Therapy, Schools, & Early Intervention*, 6(4), 314–325. doi:10.1080/19411243.2013.860763

Cahill, S. M., McGuire, B., Krumdick, N. D., & Lee, M. M. (2014). National survey of occupational therapy practitioners' involvement in response to intervention. *American Journal of Occupational Therapy*, 68(6), e234–e240. doi:10.5014/ajot.2014.010116

Caie, P., & Brooks, R. (2021). We need to completely change the way we look at therapy: Occupational therapy in specialist schools. In *Journal of Occupational Therapy, Schools & Early Intervention* (pp. 1–13). .

Camden, C., Campbell, W., Missiuna, C., Berbari, J., Héguy, L., Gauvin, C., & Anaby, D. (2021). Implementing partnering for change in Québec: Occupational therapy activities and stakeholders' perceptions. *Canadian Journal of Occupational Therapy*, 88(1), 71–82. doi:10.1177/0008417421994368

Campbell, N., Camden, C., & Missiuna, C. (2016). Reflections on using a community-based and multisystem approach to transforming school-based intervention for children with developmental motor disorders. *Current Developmental Disorders Reports*, 3(2), 129. doi:10.1007/s40474-016-0081-y

Case-Smith, J., Holland, T., Lane, A., & White, S. (2012). Effect of a coteaching handwriting program for first graders: One-group pretest–posttest design. *American Journal of Occupational Therapy*, 66 (4), 396–405. doi:10.5014/ajot.2014.011585

Casillas, D. (2010a). Teachers' perceptions of school-based occupational therapy consultation: Part I. *Early Intervention and School Special Interest Section Quarterly*, *17*(1), 1–4.

Casillas, D. (2010b). Teachers' perceptions of school-based occupational therapy consultation: Part II. *Early Intervention and School Special Interest Section Quarterly*, *17*(2), 1–4.

Christner, A. (2015). Promoting the role of occupational therapy in school-based collaboration: Outcome project. *Journal of Occupational Therapy, Schools, & Early Intervention*, *8*(2), 136–148. doi:10.1080/19411243.2015.1038469

Clark, G. F., Laverdure, P., Polichino, J., & Kannenberg, K. (2017). Guidelines for occupational therapy services in early intervention and schools. *AJOT: American Journal of Occupational Therapy*, *71*(S2), 7112410010p1–7112410010p1.

Clough, C. (2019). School-based occupational therapists' service delivery decision-making: Perspectives on identity and roles. *Journal of Occupational Therapy, Schools, & Early Intervention*, *12*(1), 51–67. doi:10.1080/19411243.2018.1512436

Corley, A. (2021). Implementation of Best Practice in the School-based Setting. Journal of Occupational Therapy, Schools, & Early Intervention, 1–15.

Cramm, H., & Egan, M. (2015). Practice patterns of school-based occupational therapists targeting handwriting: A knowledge-to-practice gap. *Journal of Occupational Therapy, Schools, & Early Intervention*, *8*(2), 170–179. doi:10.1080/19411243.2015.1040942

Dahl-Popolizio, S., Rogers, O., Muir, S. L., Carroll, J., & Manson, L. (2017). Interprofessional primary care: The value of occupational therapy. *The Open Journal of Occupational Therapy*, *5*(3), 11. doi:10.15453/2168-6408.1363

Donica, D. K. (2015). Handwriting without tears®: General education effectiveness through a consultative approach. *American Journal of Occupational Therapy*, *69*(6), 6906180050p1–6906180050p8. doi:10.5014/ajot.2015.018366

Drost, E. A. (2011). Validity and reliability in social science research. *Education Research and Perspectives*, *38*(1), 105.

Duff, J., & Downer, M. (2021). Fostering intra-professional teamwork and communication through a collaborative, virtual simulation experience for DPT and PTA students association of schools advancing health professions, live virtual series. *Journal of Allied Health*, September 30, 2020-March 24, 2021, 88.

Edick, J. (2021). Elementary teachers' perceptions of the value of collaboration with school-based occupational therapists. *Occupational Therapy Doctorate Capstone Projects*, *73*. https://encompass.eku.edu/otdcapstones/73

Erhardt, R. P., & Meade, V. (2005). Improving handwriting without teaching handwriting: The consultative clinical reasoning process. *Australian Occupational Therapy Journal*, *52*(3), 199–210. doi:10.1111/j.1440-1630.2005.00505.x

Fairbairn, M., & Davidson, I. (1993). Teachers' perceptions of the role and effectiveness of occupational therapists in schools. *Canadian Journal of Occupational Therapy*, *60*(4), 185–191. doi:10.1177/000841749306000404

Faul, F., Erdfelder, E., & Buchner, A. (2007). G*Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavioral Research Methods*, *39*(2), 175–191. doi:10.3758/BF03193146

Flood, B., Hocking, C., Smythe, L., & Jones, M. (2019). Working in a spirit of interprofessional practice: A hermeneutic phenomenological study. *Journal of Interprofessional Care*, *33*(6), 744–752. doi:10.1080/13561820.2019.1577810

Frolek Clark, G., & Polichino, J. (2021). School occupational therapy: Staying focused on participation and educational performance. *Journal of Occupational Therapy, Schools, & Early Intervention*, *14*(1), 19–26.

Garfinkel, M., & Seruya, F. M. (2016). Therapists' perceptions of a workload-oriented service delivery model in school-based practice. *American Journal of Occupational Therapy*, *70*(4_Supplement_1), 7011505145p1–7011505145p1. doi:10.5014/ajot.2016.70S1-PO4118

Garfinkel, M., & Seruya, F. M. (2018). Therapists' perceptions of the 3: 1 service delivery model: A workload approach to school-based practice. *Journal of Occupational Therapy, Schools, & Early Intervention*, 11(3), 1–18. https://doi.org/10.1080/19411243.2018.1455551 .

Goodrich, B. (2013). School-based practice: Understanding the IEP-driven service. *OT Practice*, *18* (6), 7, 21.

Grajo, L. C., & Candler, C. (2016). An occupation and participation approach to reading intervention (OPARI) part II: Pilot clinical application. *Journal of Occupational Therapy, Schools, & Early Intervention*, *9*(1), 86–98. doi:10.1080/19411243.2016.1141082

Green, B. N., & Johnson, C. D. (2015). Interprofessional collaboration in research, education, and clinical practice: Working together for a better future. *Journal of Chiropractic Education*, *29*(1), 1–10. doi:10.7899/JCE-14-36

Hargreaves, A. T., Nakhooda, R., Mottay, N., & Subramoney, S. (2012). The collaborative relationship between teachers and occupational therapists in junior primary mainstream schools. *South African Journal of Occupational Therapy*, *42*(1), 7–10.

Harney, O. M., Hogan, M. J., & Quinn, S. (2017). Investigating the effects of peer to peer prompts on collaborative argumentation, consensus and perceived efficacy in collaborative learning. *International Journal of Computer-Supported Collaborative Learning*, *12*(3), 307–336. doi:10.1007/s11412-017-9263-9

Holt, S. L., Kuperstein, J., & Effgen, S. (2015). Physical therapists' perceptions of school-based practices. *Physical & Occupational Therapy in Pediatrics*, *35*(4), 381–395. doi:10.3109/01942638.2014.978931

Hutton, E., Tuppeny, S., & Hasselbusch, A. (2016). Making a case for universal and targeted children's occupational therapy in the United Kingdom. *British Journal of Occupational Therapy*, *79*(7), 450. doi:10.1177/0308022615618218

Individuals with disabilities education improvement act of 2004, P.L. *108–446*. 20, U.S.C. $ 1400 et seq

Interprofessional Educational Collaborative. (2016). Core competencies for interprofessional collaborative practice: 2016 update. https://hsc.unm.edu/ipe/resources/ipec-2016-core-competencies.pdf

Jackson, J. B. (2017). A study protocol for enriching the interprofessional collaborative competency attainment survey insights. *Journal of Interprofessional Care*, *31*(6), 797–798. doi:10.1080/13561820.2017.1340878

Johnson Coffelt, K., & Gabriel, L. S. (2017). Continuing Competence Trends of Occupational Therapy Practitioners. *The Open Journal of Occupational Therapy*, *5*(1), 4. doi:10.15453/2168-6408.1268

Kadar, M., Razaob, N. A., Saibani, N. M., Chui, C. S., & Samin, N. (2017). Reframing services for Malaysian students in schools: Time to bring occupational therapy into the classroom. *Jurnal Sains Kesihatan Malaysia (Malaysian Journal of Health Sciences)*, *15*(1). doi:10.17576/JSKM-2017-1501-09

Kessler, D., & Graham, F. (2015). The use of coaching in occupational therapy: An integrative review. *Australian Occupational Therapy Journal*, *62*(3), 160–176. doi:10.1111/1440-1630.12175

King, J., Beanlands, S., Fiset, V., Chartrand, L., Clarke, S., Findlay, T., and Summers, I. (2016). Using interprofessional simulation to improve collaborative competences for nursing, physiotherapy, and respiratory therapy students. Journal of Interprofessional Care, 30(5), 599–605.

Kramer-Roy, D., Hashim, D., Tahir, N., Khan, A., Khalid, A., Faiz, N., & Frater, T. (2020). The developing role of occupational therapists in school-based practice: Experiences from collaborative action research in Pakistan. *British Journal of Occupational Therapy*, *83*(6), 375–386. doi:10.1177/0308022619891841

Lamash, L., & Fogel, Y. (2021). Role perception and professional identity of occupational therapists working in education systems. *Canadian Journal of Occupational Therapy*, 88(2), 163-172. .

Lane, P. (2008). Handling drop-out in longitudinal clinical trials: A comparison of the LOCF and MMRM approaches. *Pharmaceutical Statistics*, *7*(2), 93–106. doi:10.1002/pst.267

Laverdure, P. A. (2011). Using the evidence: Better decision making in school-based practice. *OT Practice*, *16*(4), 8–11.

Laverdure, P. (2014). Considerations for the development of expert practice in school-based occupational therapy. *Journal of Occupational Therapy, Schools, & Early Intervention*, *7*(3–4), 225–234. doi:10.1080/19411243.2014.966016

Laverdure, P., Seruya, F. M., Stephenson, P., & Cosbey, J. (2016). Paradigm transitions in pediatric practice: Tools to guide practice. *SIS Quarterly Practice Connections*, *1*(2), 5–7.

Leigers, K., Myers, C., & Schneck, C. (2016). Social participation in schools: A survey of occupational therapy practitioners. *American Journal of Occupational Therapy*, *70*(5), 7005280010p1–7005280010p9. doi:10.5014/ajot.2016.020768

Liu, S., Keeley, J., & Buskist, W. (2015). Chinese college students' perceptions of characteristics of excellent teachers. *Teaching of Psychology*, *42*(1), 83–86. doi:10.1177/0098628314562684

Mac Cobb, S., Fitzgerald, B., & Lanigan-O'Keeffe, C. (2014). The alert program for self-management of behaviour in second level schools: Results of phase 1 of a pilot study. *Emotional and Behavioural Difficulties*, *19*(4), 410–425. doi:10.1080/13632752.2014.903593

MacDonald, C., Archibald, D., Trumpower, D., Casimiro, L., Cragg, B., & Jelley, W. (2010). Designing and operationalizing a toolkit of bilingual interprofessional education assessment instruments. *Journal of Research in Interprofessional Practice and Education*, *1*(3). doi:10.22230/jripe.2010v1n3a36

MacKenzie, D., Creaser, G., Sponagle, K., Gubitz, G., MacDougall, P., Blacquiere, D., & Sarty, G. (2017). Best practice interprofessional stroke care collaboration and simulation: The student perspective. *Journal of Interprofessional Care*, *31*(6), 793–796. doi:10.1080/13561820.2017.1356272

Martino, E. M., & Lape, J. E. (2021). Occupational therapy in the preschool classroom-Promoting fine motor and visual motor skills for kindergarten readiness. *Journal of Occupational Therapy, Schools, & Early Intervention*, *14*(2), 134–152. doi:10.1080/19411243.2020.1822261

Miller-Kuhaneck, H., & Watling, R. (2018). Parental or teacher education and coaching to support function and participation of children and youth with sensory processing and sensory integration challenges: A systematic review. *American Journal of Occupational Therapy*, *72*(1), 7201190030p1–7201190030p11.

Missiuna, C., Pollock, N., Campbell, W., Dix, L., Whalen, S. S., & Stewart, D. (2015). Partnering for Change: Embedding universal design for learning into school-based occupational therapy. *Occupational Therapy Now*, *17*(3), 13.

Missiuna, C. A., Pollock, N. A., Levac, D. E., Campbell, N., Whalen, S. S., Bennett, S. M., & Russell, D. J. (2012). Partnering for change: An innovative school-based occupational therapy service delivery model for children with developmental coordination disorder. *Canadian Journal of Occupational Therapy. Revue Canadienne D'ergotherapie*, *79*(1), 41–50. doi:10.2182/cjot.2012.79.1.6

Musyoka, M. M., & Clark, M. D. (2015). Teachers' perceptions of individualized education program (IEP) goals and related services. *Journal of Developmental and Physical Disabilities*, 1–19. doi:10.1007/s10882-015-9462-0

Ng, S. L., Lingard, L., Hibbert, K., Regan, S., Phelan, S., Stooke, R., & Friesen, F. (2015). Supporting children with disabilities at school: Implications for the advocate role in professional practice and education. *Disability and Rehabilitation*, *37*(24), 2282–2290. doi:10.3109/09638288.2015.1021021

Nielsen, S. K., & Hektner, J. M. (2014). Understanding the psychosocial knowledge and attitudes of school-based occupational therapists. *Journal of Occupational Therapy, Schools, & Early Intervention*, *7*(2), 136–150. doi:10.1080/19411243.2014.930615

O'Donoghue, C., O'Leary, J., & Lynch, H. (2021). Occupational therapy services in school-based practice: A pediatric occupational therapy perspective from Ireland. *Occupational Therapy International*, *2021*, 1–11. *2021* doi:10.1155/2021/6636478

Occupational Therapy Practice Framework: Domain & process. (2014). *American Journal of Occupational Therapy*, 3rd Edition., S1.

Ohl, A. M., Graze, H., Weber, K., Kenny, S., Salvatore, C., & Wagreich, S. (2013). Effectiveness of a 10-week tier-1 response to intervention program in improving fine motor and visual–motor skills in general education kindergarten students. *American Journal of Occupational Therapy*, *67*(5), 507–514. doi:10.5014/ajot.2013.008110

Orentlicher, M., Lashinsky, D., Teixeira, S. B., & Mograby, A. (2019). The experiences and perceptions of collaboration between OTs and other school professionals. *American Journal of Occupational Therapy*, *73*(4_Supplement_1), 7311505127p1–7311505127p1. doi:10.5014/ajot.2019.73S1-PO4003

Patton, S., Hutton, E., & MacCobb, S. (2015). Curriculum differentiation for handwriting and occupational therapy/teacher partnership: Collaboration or conflict? *Irish Educational Studies*, *34* (2), 107–124. doi:10.1080/03323315.2015.1032994

Phelan, S. K., & Ng, S. (2015). A case review: Reframing school-based practices using a critical perspective. *Physical & Occupational Therapy in Pediatrics*, *35*(4), 396–411. doi:10.3109/01942638.2014.978933

Pollock, N. A., Dix, L., Whalen, S. S., Campbell, W. N., & Missiuna, C. A. (2017). Supporting occupational therapists implementing a capacity-building model in schools: Appuyer les ergothérapeutes mettant en œuvre un modèle de renforcement des capacités dans les écoles. *Canadian Journal of Occupational Therapy*, *84*(4–5), 242–252. doi:10.1177/0008417417709483

Pratt, S. (2014). Achieving symbiosis: Working through challenges found in co-teaching to achieve effective co-teaching relationships. *Teaching and Teacher Education*, *41*, 1–12. doi:10.1016/j.tate.2014.02.006

Rens, L., & Joosten, A. (2014). Investigating the experiences in a school-based occupational therapy program to inform community-based pediatric occupational therapy practice. *Australian Occupational Therapy Journal*, *61*(3), 148–158. doi:10.1111/1440-1630.12093

Robinson, O. C. (2014). Sampling in interview-based qualitative research: A theoretical and practical guide. *Qualitative Research in Psychology*, *11*(1), 25–41. doi:10.1080/14780887.2013.801543

Rodrigues, S., & Seruya, F. (2019). Exploring practice trends and perceived needs of OT practitioners working in middle-school settings. *American Journal of Occupational Therapy*, *73* (4_Supplement_1), 7311500003p1–7311500003p1. doi:10.5014/ajot.2019.73S1-PO1003

Rogers, Y., & Ellis, J. (1994). Distributed cognition: An alternative framework for analysing and explaining collaborative working. *Journal of Information Technology*, *9*(2), 119–128. doi:10.1177/026839629400900203

Rose, E., & Seruya, F. (2020). Collaboration, the elusive phenomenon: Perceptions of OTs in the school setting. *American Journal of Occupational Therapy*, *74*(4_Supplement_1), 7411505134p1–7411505134p1. doi:10.5014/ajot.2020.74S1-PO3315

Schefkind, S., & Carroll, T. C. (2015). Being responsive to new trends in school practice. *Journal of Occupational Therapy, Schools, & Early Intervention*, *8*(3), 216–227. doi:10.1080/19411243.2015.1084836

Schwindt, R., Agley, J., McNelis, A. M., Hudmon, K. S., Lay, K., & Bentley, M. (2017). Assessing perceptions of interprofessional education and collaboration among graduate health professions students using the interprofessional collaborative competency attainment survey (ICCAS). *Journal of Interprofessional Education & Practice*, *8*, 23–27. doi:10.1016/j.xjep.2017.05.005

Selanikyo, E., Yalon-Chamovitz, S., & Weintraub, N. (2016). Enhancing classroom participation of students with intellectual and developmental disabilities. *Canadian Journal of Occupational Therapy*, 0008417416661346. doi:10.1177/0008417416661346

Seruya, F. M., & Garfinkel, M. (2018). Implementing contextually based services: Where do we begin? *SIS Quarterly Practice Connections*, *3*(3), 4–6.

Seruya, F. M., & Garfinkel, M. (2020). Caseload and workload: Current trends in school-based practice across the United States. *American Journal of Occupational Therapy*, *74*(5), 1–8. doi:10.5014/ajot.2020.039818

Sinai-Gavrilov, Y., Gev, T., Mor-Snir, I., & Golan, O. (2019). Seeking team collaboration, dialogue and support: The perceptions of multidisciplinary staff-members working in ASD preschools. *Journal of Autism and Developmental Disorders*, *49*(11), 4634–4645. doi:10.1007/s10803-019-04175-x

Spencer, K. C., Turkett, A., Vaughan, R., & Koenig, S. (2006). School-based practice patterns: A survey of occupational therapists in Colorado. *American Journal of Occupational Therapy*, *60* (1), 81–91. doi:10.5014/ajot.60.1.81

Steinhoff, E. 2015. The role of occupational therapy in implementing inclusive education in a residential care facility: A case study. *Independent Study Project (ISP) Collection*, 2159 https://digitalcollections.sit.edu/isp_collection/2159

Stephenson, P., Laverdure, P., Seruya, F. M., & Cosbey, J. (2017). Not just for children: Facilitating behavior change in school-based practice. *SIS Quarterly Practice Connections*, *2*(4), 2–4.

Szucs, K. A., Benson, J. D., & Corturillo, A. (2016). Use of a journal club for professional development: Outcomes in a school-based occupational therapy practice. *Journal of Occupational Therapy, Schools, & Early Intervention*, 9(2), 208–219. doi:10.1080/19411243.2016.1176549

Tracy-Bronson, C. P., Causton, J. N., & MacLeod, K. M. (2019). Everybody has the right to be here: Perspectives of related service therapists. *International Journal of Whole Schooling*, 15(1), 132–174.

Truong, V., & Hodgetts, S. (2017). An exploration of teacher perceptions toward occupational therapy and occupational therapy practices: A scoping review. *Journal of Occupational Therapy, Schools, & Early Intervention*, 10(2), 121–136. doi:10.1080/19411243.2017.1304840

Vandergoot, S., Sarris, A., Kirby, N., & Ward, H. (2018). Exploring undergraduate students' attitudes towards interprofessional learning, motivation-to-learn, and perceived impact of learning conflict resolution skills. *Journal of Interprofessional Care*, 32(2), 211–219. doi:10.1080/13561820.2017.1383975

Vaz, S., Wilson, N., Falkmer, M., Sim, A., Scott, M., Cordier, R., & Falkmer, T. (2015). Factors associated with primary school teachers' attitudes towards the inclusion of students with disabilities. *PloS one*, 10(8), e0137002. doi:10.1371/journal.pone.0137002

Villeneuve, M. (2009). A critical examination of school-based occupational therapy collaborative consultation. *Canadian Journal of Occupational Therapy*, 76(1_suppl), 206–218. doi:10.1177/000841740907600s05

Villeneuve, M. A., & Hutchinson, N. L. (2015). Incorporating therapy into the regular curriculum: Working together with occupational therapists. In *Working with teaching assistants and other support staff for inclusive education* (pp. 65–92). Emerald Group Publishing Limited.

Villeneuve, M. A., & Shulha, L. M. (2012). Learning together for effective collaboration in school-based occupational therapy practice. *Canadian Journal of Occupational Therapy*, 79(5), 293–302. doi:10.2182/CJOT.2012.79.5.5

Watt, H., Richards, L. G., Woolley, H., Price, P., & Gray, S. (2021). Integrated services or pullout? Factors influencing school-based occupational therapy service delivery models. In *Journal of Occupational Therapy, Schools & Early Intervention* (pp. 1–15). .

Wilson, A. L., & Harris, S. R. (2018). Collaborative occupational therapy: Teachers' impressions of the partnering for change (P4C) model. *Physical & Occupational Therapy in Pediatrics*, 38(2), 130–142. doi:10.1080/01942638.2017.1297988

Wintle, J., Krupa, T., Cramm, H., & DeLuca, C. (2017). A scoping review of the tensions in OT–teacher collaborations. *Journal of Occupational Therapy, Schools, & Early Intervention*, 10(4), 327–345. doi:10.1080/19411243.2017.1359134

Wintle, J., Krupa, T., DeLuca, C., & Cramm, H. (2021). Toward a conceptual framework for occupational therapist-teacher collaborations. *Journal of Occupational Therapy, Schools & Early Intervention*. 1–17).

Wolfe, A. D., Hoang, K. B., & Denniston, S. F. (2018). Teaching conflict resolution in medicine: Lessons from business, diplomacy, and theatre. *MedEdPORTAL*, 14 10672 .

Yardley, L. (2000). Dilemmas in qualitative health research. *Psychology and Health*, 15(2), 215–228. doi:10.1080/08870440008400302

Young, L. (2016). Changing school-based occupational therapy: Three studies over eight years have shown the P4C approach to be highly successful. Hamilton Spectator (Ontario, Canada). Retrieved from http://.thespec.com/opinion-story/6326003-transforming-school-based-occupational-therapy-services/

Young, D., Wagenfeld, A., & Rocker, H. V. V. (2019). Universal design and the built environment: Occupational therapy and interprofessional design teams—A scoping review. *Annals of International Occupational Therapy*, 2(4), 186–194. doi:10.3928/24761222-20190625-04

Zylstra, S. E., & Pfeiffer, B. (2016). Effectiveness of a handwriting intervention with at-risk kindergarteners. *American Journal of Occupational Therapy*, 70(3), 7003220020p1–7003220020p8. doi:10.5014/ajot.2016.018820