

Training Paraprofessional Staff to Facilitate Social Interactions Within a Job-Embedded Training
Model

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Abstract

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This study examined a special education teacher delivered job-embedded paraprofessional training curriculum to increase the rates of social facilitation by paraprofessionals working with students with low-incidence disabilities in general education settings. Rates of social facilitation, and subsequent rates of social interactions between students with disabilities and their general education classmates were measured utilizing a multiple probe design across six participating special education teacher, paraprofessional, and student triads. Special education teachers were able to train their paraprofessionals in a short amount of time and in a manner consistent with their existing teaming model. Results varied by triad, with some participants showing strong treatment effects after receiving the training, and some showing limited effects. All students with

low-incidence disabilities increased their rates of social interactions with general education peers as a result of the training. Social validity measures and field notes indicate that teachers were pleased with the training package and would be willing to use the curriculum to train paraprofessionals in the future. Implications for paraprofessional training practices in schools are discussed.

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DEDICATION

To Angela,

I would need to explore new languages to find adequate words to express my gratitude for your sacrifices and support throughout this process. You have all my love and I look forward to sharing in so much more with you in this next stage of life.

To Anna and Basil,

I hope that you find value and meaning in your civic duties, like I have found in mine. I love you both more than you can ever imagine.

CHAPTER 1

INTRODUCTION

“Few teachers can be placed in a classroom without having learned the classroom management techniques required to develop lessons, deliver instruction, and assess students. Many teachers, however, find themselves ill-equipped to manage the work of another adult – the paraeducator – because they have received little or no formal training in supervisory methods, either as part of their teacher education or from their school or district” (Wallace, 2002).

The utilization of paraprofessional staff in special education programs has grown significantly over the years. As of 2010, the number of special education paraprofessionals (401,285 full time equivalent paraprofessionals) exceeded the number of special education teachers (370,456 full time equivalent teachers) employed in schools in the United States (Brock & Carter, 2013). It is widely reported in the literature that paraprofessionals enter into the field with little preparation or training to work with students with disabilities (Carter, O’Rourke, Sisco, & Pelsue, 2009; Jones & Bender, 1993). Most new paraprofessionals are thrown into their work duties and learn on the fly (Downing, Ryndak, & Clark, 2000). The bulk of training occurs on-the-job and training responsibilities most often fall to the special education teachers responsible for the supervision of the paraprofessional (Wallace, Shin, Bartholomay, & Stahl, 2001).

One of the major concerns with the utilization of paraprofessionals in supporting students with disabilities is the potential negative impact their presence or proximity can have on social interactions with peers (Giangreco, Edelman, Luiselli, & MacFarland, 1997). Giangreco and colleagues (1997) found that the close proximity of paraprofessionals to students with disabilities

negatively impacted their peer interactions, which affected their relationships with peers. Other studies examining issues from the perspectives of students with disabilities have supported these findings (Broer, Doyle, & Giangreco, 2005; Malmgren & Causton-Theoharis, 2006; Tews & Lupart, 2008).

Knowing that paraprofessionals play a major role in the provision of services to students with disabilities in schools, it is critical that the field seriously examine the training and supervision needs of these educators, so they can be appropriately supported and utilized in schools. There is a small but growing research base examining the efficacy of training procedures to provide professional development for paraprofessionals to implement evidence-based practices (Brock & Carter, 2015; Brock & Carter, 2013; Mason et al., 2017; Rispoli, Neely, Lang, & Ganz, 2011). However, only two of the recent studies examining these training practices have utilized special education teachers as the trainers (Brock & Carter, 2015; Mason et al., 2017). This represents a significant gap in the research literature, as special education teachers are responsible for the bulk of training and supervision of paraprofessionals. The professional development literature suggests that high quality job-embedded professional development for school personnel, should include an active learning component with opportunities for authentic participation and reflection, and the provision of coaching, mentoring, or performance feedback during learning of the practice, that can be extended as follow up support during implementation in practice in schools (Dunst, Bruder, & Hamby, 2015). Instructional leaders in the schools, such as special education teachers, may be well suited to provide this type of professional development to paraprofessionals, if given skills that they themselves have mastered and some structure and resources to build their trainings around.

There have been several recent experimental studies examining the training of paraprofessionals to increase social interactions. These have shown that paraprofessionals can be taught valuable social facilitation skills that result in improved social engagement and outcomes for individuals with disabilities when provided carefully designed training by researchers and research teams (Causton-Theoharis & Malmgren, 2005; Feldman & Matos, 2013; Koegel, Kim, & Koegel, 2014; Mazurik-Charles & Stefanou, 2010; Robinson, 2011). Interestingly, the recent study in which special education teachers provided training to paraprofessionals to implement peer support arrangements, revealed that while the paraprofessionals were able to effectively implement peer support strategies, their social facilitation behaviors were not changed by the training package delivered by special educators (Brock & Carter, 2016). As the evidence base grows to support the use of paraprofessionals as intervention agents to facilitate the social interaction between students with disabilities and their general education peers, it is not known if special education teachers can provide effective training to paraprofessionals that can replicate the positive results of these studies, as the studies that showed promising results included researchers and research teams as trainers.

Research Questions

This research proposal involves the replication of two earlier studies. One a dissertation study conducted by Causton-Theoharis (2003), and reported in *Exceptional Children* as Causton-Theoharis and Malmgren (2005). The other a study by the same research team, reported in *Behavioral Disorders* as Malmgren, Causton-Theoharis, and Trezek (2005). This study replicated aspects of the original studies, but involved a critical difference in the staff utilized to train the paraprofessionals. In her study (Causton-Theoharis, 2003), the researcher was the trainer working with the participating paraprofessional staff. Causton-Theoharis was also the

trainer in the second study. This study proposes to utilize special education teachers as the direct trainers of the participating paraprofessionals. The research questions are:

1. Will paraprofessionals successfully acquire and apply facilitative behaviors to support social interactions between students with disabilities and their peers without disabilities with training from their supervising special education teacher?
2. Does training paraprofessionals to facilitate interactions between students with disabilities and their non-disabled peers increase the quantity of interactions between students with disabilities and their peers that occur in a general education setting?
3. Does the training of paraprofessionals to facilitate social interactions between students with disabilities and their non-disabled peers, increase the facilitative behaviors of these paraprofessionals in a generalization setting (non-training setting, another setting with in which the student is supported by the paraprofessional and in contact with peers without disabilities)?
4. How do special education teachers engage in follow up support and coaching with paraprofessionals when using the job-embedded curriculum?
5. How do special education teachers, and paraprofessionals view the feasibility and acceptability of the professional development package?

CHAPTER 2

LITERATURE REVIEW

Walk into almost any school in the United States serving students with disabilities and you are likely to find paraprofessionals serving students in a variety of roles, across a mix of settings. There were over 438,000 special education paraprofessionals working in the United States in 2012 (National Center for Education Statistics, 2012). The number of special education paraprofessionals has risen dramatically over the years. It was estimated in 1977 that 27,000 special education paraprofessionals were employed in the U.S. (Fafard, El-Mohammed, Gartner, & Schachter, 1977), a decade later the numbers rose to over 150,000 (Pickett, 1986), and by 2000 it was estimated that over 300,000 paraprofessionals were working in special education (Giangreco, Edelman, Broer, & Doyle, 2001). The number of special education paraprofessionals has grown 131% since 1992, while in that same period of time, the number of certified special education teachers has decreased (Fisher & Pleasants, 2012).

The utilization of non-certified support staff in schools has been a long-standing practice. Nearly 60 years ago, Cruikshank and Haring (1957) documented the results of a demonstration project in Syracuse public schools examining the efficacy of utilizing teaching assistants to support programs serving exceptional children. Since 1957, the roles and responsibilities of special education paraprofessionals have evolved. Paraprofessionals increasingly provide direct student support and instruction, and they participate minimally in roles involving clerical and general classroom support tasks (Carter, O'Rourke, Sisco, & Pelsue, 2009). This evolution in responsibilities means that paraprofessionals are playing increasingly significant instructional

roles in schools. In many instances a core responsibility for special education teachers has become managing instructional teams of paraprofessionals to support student learning. The supervision and management of paraprofessionals is a time consuming and challenging task for many teachers, while at the same time paraprofessionals themselves face several challenges in the work place including deficiencies in role clarity, training, and recognition (Giangreco & Broer, 2005).

Four strands of literature inform this review: (1) the literature on the roles and responsibilities of special education paraprofessionals, (2) the literature detailing the typical training that paraprofessionals receive to perform their duties, (3) the literature on training methods related to paraprofessionals and the implementation of evidence-based practices, and (4) a summary of theoretical concepts about professional development and training. The four strands all relate directly to the appropriate utilization of paraprofessionals as support personnel in providing high quality educational programming to students with disabilities.

There have been three previously published exhaustive literature reviews of the special education paraprofessional literature (Jones & Bender, 1993; Giangreco, Edelman, Broer, & Doyle, 2001; Giangreco, Suter, & Doyle, 2010). Jones and Bender (1993) undertook the initial exhaustive literature review and Giangreco and colleagues have examined the subsequent published articles from the United States in their subsequent reviews (Giangreco, Edelman, Broer, & Doyle, 2001; Giangreco, Suter, & Doyle, 2010). In addition, there have been two recent systematic reviews of studies focused on training paraprofessionals to deliver interventions with specific student populations: students with autism spectrum disorder (Rispoli, Neely, Lang, & Ganz, 2011), and students with intellectual and developmental disabilities (Brock & Carter, 2013).

Roles and Responsibilities

Calls from the field to increase access to quality instruction for students with disabilities has been occurring since before students with disabilities had been guaranteed the right of public schooling. Cruikshank and Haring (1957) specified in the introduction to their work that non-certified support staff could be utilized to assume responsibility for many of the strictly administrative tasks, “which require so much of the teacher’s valuable time. The major purpose of this is to increase the quality of instruction for a greater number of exceptional children” (p. v). Orientation activities in the Syracuse model demonstration project emphasized setting limits in regards to the assistants’ role. “It was stressed by frequent reiteration in the conference that the assistant was a subordinate of the teacher and that no action should be taken by the assistant which would be in any way a direct teaching, disciplining, assigning, or otherwise schooling of any child or children” (p. 5).

The Cruikshank and Haring (1957) study was the earliest study examining the efficacy of utilizing paraprofessionals in special education programs. The study involved the selection, training, and use of non-certified staff to support programs for one academic year. In all, assistants were placed in thirteen educational settings serving students with disabilities. The settings included self-contained programs serving students with physical, intellectual, and emotional disabilities; regular education classrooms including students with vision impairments, and itinerant programs supporting speech language pathologists. The identified roles of paraprofessionals in the self-contained classrooms included the following: clerical tasks such as making copies and dittos, collecting attendance, doing inventories of classroom supplies and needs, supervision tasks such as monitoring the rest period, monitoring recess and gym class, assisting with students’ personal needs such as toileting, and grooming, and material prep and

repair (sewing curtains, managing art supplies, painting shelves and repairing play equipment). Overall, the professional educators included in the demonstration project reported feeling positive about the use of teaching assistants. The research design of the study was limited as it failed to include comparison classrooms, or student outcome data. The positive assessment of the program was based on periodic observation by the program director and on self-reports and interviews with the teachers involved.

Two decades later, Fafard, El-Mohammed, Gartner, and Schachter (1977) conducted a study examining the use of special education paraprofessionals that included survey responses: from 54 state directors of special education (including states, territories, and the District of Columbia), 11 privately funded organizations that sponsored special education programs, and 348 public and private schools serving students with disabilities. In addition, the study included direct observation data on the activities of paraprofessionals in schools across 7 different states representing broad geographic coverage of the United States (California, Florida, Georgia, Minnesota, New York, Oregon, and Pennsylvania). Of the 348 school facilities surveyed, 320 (92%) programs used paraprofessionals. Of the respondents, 85% of the schools reported that paraprofessionals work with individual students in the classroom, 70% reported that paraprofessionals serve a role in supervising or leading outdoor activities for students, 59% of schools used paraprofessionals to supervise lunch programs, rest periods, and health needs. Surprisingly, only 42% of schools reported that paraprofessional staff were asked to complete clerical work. The researchers found in their direct observation of the work of paraprofessionals ($n=67$) that 91% of assistants observed were engaged (at some point during the observation periods) in helping individual children with school work, 82% were working with small groups of children on school work, 70% assisted a teacher with instruction, 70% were working in small

groups with special materials, 67% were reading to or playing games with students, and 55% were initiating and carrying lessons in the classroom (p.38).

In the time between the two studies, the assistant superintendent of Duluth schools wrote an editorial asking, “Should teacher aides be more than clerks?” (Ebsensen, 1966). His answer to that question was a resounding yes and he argued that a properly trained aide under the general supervision of a classroom teacher should take on limited instructional tasks. The data suggests that during the twenty years between the studies by Cruikshank and Haring (1957) and Fafard et al. (1977), the roles and responsibilities of paraprofessionals shifted to include several duties involving the ‘direct teaching’ and ‘schooling of children’. The literature shows the involvement of paraprofessionals in instructional tasks has persisted, even growing more prevalent in current practice.

Recent studies examining the roles and responsibilities of paraprofessionals show that this trend towards instructional responsibilities is pervasive. Several studies have focused attention on the roles and responsibilities that paraprofessionals complete as part of their duties in schools serving special education students (French, 1998; Marks, Schrader, & Levine, 1999; Downing, Ryndak, & Clark, 2000; Riggs & Mueller, 2001; Carlson, Brauen, Klein, Schroll, & Willig, 2002; Giangreco, Broer, & Edelman, 2002; Giangreco & Broer, 2005; Patterson, 2006; Carter, O’Rourke, Sisco, & Pelsue, 2009; Fisher & Pleasants, 2012; Blatchford, Russell, & Webster, 2012; Bryan, McCubbin, & Van Der Mars, 2013).

In their study examining the work of 20 non-public agency paraprofessionals providing one-on-one support for students with challenging behavior in general education classrooms, Marks, Schrader, and Levine (1999) found that the paraprofessionals self-identified their roles as providing academic and social skills instruction, making curriculum modifications, and

developing working relationships with other school staff. Specific themes highlighted include paraprofessionals viewing that it was their responsibility to manage student behavior and not allow the students they supported to be a bother to the teacher and the classrooms where they were served. Additionally, more than half of the study participants reported feeling that meeting the student's immediate academic needs were a central component of their job responsibilities. This resulted in paraprofessionals designing and making adaptations to the curriculum, in many instances without direct consultation from the certified educators. There are limitations in terms of the sample and population of this study. The staff was contracted agency aides specifically employed by their districts to support students with challenging behavior. This limits the generalizability of these findings. However, these findings are echoed in other studies that include school district employees; specifically, that paraprofessionals feel they are largely responsible for the students they are supporting not being a bother to the teachers (Patterson, 2006; Bryan, McCubbin, & Van Der Mars, 2013) and for having responsibility for academic instruction and making adaptations and accommodations (Giangreco & Broer, 2005; Fisher & Pleasants, 2012)

In her small study including 18 matched pairs of resource room teachers and paraprofessionals, French (1998) found that all of the participating paraprofessionals (n=18) provided one-on-one instruction to students accounting for around 5 ½ hours of their work week, 17 participants had small group instruction responsibilities totaling up to around 5 hours of work per week, 11 engaged in large group instructional responsibilities totaling around 2 hours per week. 13 paraprofessionals reported that they had responsibilities to create instructional materials, however, time spent on clerical tasks averaged less than 1 hour a week across the 13 participants. 7 paraprofessionals spent around 2 hours per week collecting data, and 6 spent

around the same amount of time engaged in student behavior management. French stated that, “the results of this study confirm that paraeducators serve in instructional roles and that teachers’ value this role” (p. 365).

Patterson (2006) interviewed 22 special education paraprofessionals working across three school districts in Florida. She found that 100% of the paraprofessionals reported responsibilities for direct teaching of individual or small groups of students, 77% reported teaching whole group lessons or instruction at some point in their duties, 100% have completed clerical tasks as a part of their duties, and 90% of those interviewed report that student behavior management and intervention are a major responsibility. Interestingly, Patterson found that many paraprofessionals take over the responsibility for teaching entire classes when teachers are in a meeting or out of the building. She found, “81% of the paraprofessionals reported that they were capable of teaching the class and some enjoyed the added responsibilities. However Patterson (2006) found that, 77% reported dissatisfaction at the expectations that they assume these tasks in the teacher’s absence, “often without clear instructions and financial compensation” (p. 6). The participants in the study also consistently expressed a desire for role clarification. This suggestion involved helping paraprofessionals to understand what their responsibilities involve, in addition to providing teachers and administrators with more realistic expectations about the paraprofessionals role on the team.

A study involving school personnel from Vermont conducted by Giangreco, Broer, and Edelman (2002) found that across general education teachers, special education teachers, and paraprofessionals nearly 68% agreed that instruction was the most common role engaged in by paraprofessionals. Followed by behavior support as the second most common role (reported by nearly 9% of participants). When examining these findings by role of the participant, it is

interesting to note that more special education teachers reported that paraprofessionals engage in planning (involving the development of individual or small group lessons, modification of curriculum or activities, or developing behavior plans) as their most common role than did the paraprofessionals (nearly 14% of special educators rated this as the most common role that paraprofessionals complete). Nearly 5% of the included paraprofessionals reported planning as their most common role. These findings are important for two critical reasons: 1) the special educators that are typically viewed as responsible for these planning activities, believe that paraprofessionals are completing them; and 2) that the special educators and paraprofessionals have different views of what the most common role of paraprofessionals is within the schools. All participants in the study rated clerical work and other-personal care for students (e.g., assisting with toileting, transfers, and feeding) as being the least common duties of paraprofessionals.

In a larger study completed in the state of Vermont, Giangreco and Broer (2005) found that paraprofessionals and special and general education teachers report that paraprofessionals spend the majority of their working hours engaged in instruction followed by behavior management activities. This study also asked paraprofessionals to rate their own experiences across a series of practices. An important finding from this study showed that nearly 70% of paraprofessionals reported that they agree or strongly agree that “as a paraprofessional I made curricular or instructional decisions or make adaptations to activities without always having oversight by the teacher or special education” (p. 16). Slightly over 68% of paraprofessionals reported that they make decisions on their own, such as removing students from teacher led lessons.

The Study of Personnel Needs in Special Education (SPeNSE, 2001), was conducted to examine shortages in school personnel working with students with disabilities. Special education paraprofessionals were included in this nationally representative study (in which 888 paraprofessionals were interviewed). Findings included that the majority of special education paraprofessionals spend at least 10% of their time engaged in the following activities: (a) providing one-on-one instruction to students; (b) providing instructional support in small groups; (c) modifying or adapting materials or curriculum; (d) managing student behavior or implementing behavior support plans; (e) monitoring students in various locations of the school (hallways, lunchroom, recess, etc.); (f) meeting or collaborating with teachers; (g) collecting student performance data; and (h) providing personal care assistance (Carlson, Brauen, Klein, Schroll, & Willig, 2001).

Perspectives of Paraprofessionals

Much of the available literature on paraprofessionals is based on descriptive survey, or qualitative research methods. Studies that have included paraprofessionals as participants often provide insights into the perspectives and concerns of the paraprofessionals themselves. One study by Giangreco, Edelman, and Broer (2001) examined the role of respect, appreciation, and acknowledgement as critical factors in the job satisfaction of paraprofessionals working in programs serving students with disabilities. Giangreco and colleagues found respect, appreciation, and acknowledgment to be important features in regards to job satisfaction amongst paraprofessionals. Six themes emerged from this work in terms of what paraprofessionals' value: 1) non-monetary signs and symbols of appreciation from professionals intimately familiar with their work; 2) compensation; 3) being entrusted with important responsibilities; 4) limiting non-instructional responsibilities such as clerical tasks or personal care duties; 5) feeling listened to

and valued as a member of the classroom and school team; and 6) being provided with an adequate orientation and ongoing support and training (Giangreco, Edelman, & Broer, 2001).

In their study validating a list of potential competencies for teachers responsible for the supervision of paraprofessionals, Wallace, Shin, Bartholomay, & Stahl (2001) compared the perspectives of administrators, teachers, and paraprofessionals on their perceptions regarding the importance of the seven supervisory competencies and their perceptions related to how often teachers demonstrate the skills outlined in the competencies. 211 paraprofessionals completed surveys as a part of the study. While all participants rated the seven competency areas as important in the supervision of paraprofessionals, the paraprofessionals differed from teachers and administrators on the importance of two competency areas: training and public relations. The authors suggest that these findings are consistent with the need for training from the perspective of paraprofessionals, and that the importance of public relations is rated higher by paraprofessionals because it includes “the role of teachers as advocates for paraprofessional role clarification, training, involvement in decision making, and support for training” (p. 527) as components. These issues are reported as being important to paraprofessionals elsewhere in the literature (French, 1998; Pickett, 1997; Stahl & Lorenz, 1995). Another finding from this study was that paraprofessionals had statistically significant different perceptions on how often teachers demonstrate all seven of the measured competency areas. Teachers and administrators perceived that teachers demonstrate the seven supervisory competencies much more than the paraprofessionals that are being supervised (Wallace et al., 2001).

Other studies have examined how prepared or appropriate the paraprofessionals feel in regards to their job duties, and training needs (Carlson et al., 2001; Downing et al., 2000; Giangreco & Broer, 2005). The majority of paraprofessionals report that their presence in

special education programs makes a positive difference (Jones & Bender, 1993). Studies show that the paraprofessionals that spend more time collaborating with teachers or that have completed more professional development feel more confident in completing their job responsibilities (Carlson et al., 2001). There are recurring reports that paraprofessionals request training and professional development on behavior management and interventions, disabilities, and instructional skills (French, 1998; Patterson, 2006; Riggs, 2001).

Fisher and Pleasants (2012) found that paraprofessionals desire training on teaming and opportunities to participate in planning teams and faculty meetings. They want to learn more about student's individualized education programs (IEP) and meet regularly with the teachers regarding implementation of the IEP. The biggest concerns that the participating paraprofessionals experienced were around lack of appreciation for their work, treatment on the job, poor or unfair compensation, concerns with teachers around inclusion, lack of preparation for their job responsibilities, and administrative concerns (Fisher & Pleasants, 2012).

A focus on the factors that influence the relationships between teachers and paraprofessionals is clearly important as it relates to successful collaboration and supervision practices. Biggs, Gilson, and Carter (2016) provided a rich analysis of themes found from survey and interview research examining the responses from twenty-two teachers and paraprofessionals talking about their working relationships. These findings strengthen and support the findings from earlier research on the importance of training, signs of respect and membership, and the required competencies for successful collaborative relationships.

Differences across Classroom Settings

Very little research has specifically examined the differences in paraprofessionals' roles and responsibilities and training needs across general education and special education classroom

settings. It has been suggested that paraprofessionals working in self-contained special education programs in close proximity to the special education teacher have more natural opportunities to be supervised, receive feedback, and observe the teacher model the instructional practices that are expected (Giangreco, Yuan, McKenzie, Cameron, & Fialka, 2005). In a recent study surveying 313 paraprofessionals across nine school districts representing both rural, suburban, and urban schools in a mid-western state, Carter, O'Rourke, Sisco, and Pelsue (2009), found that the large majority of paraprofessionals work across both general education and special education settings. In fact, only a small portion (12.1%) of the participants worked exclusively in special education classrooms.

A second finding indicated that when paraprofessionals were placed in a general education classroom to provide general support (as opposed to working with an individual student), general education teachers were more engaged with the students with disabilities. In addition, teachers working with paraprofessionals assigned to a program were more likely to review lesson and unit plans, and to provide initial and ongoing on-the-job training, modeling, and mentoring. However, it should be noted that Giangreco, Broer, and Edelman (2001) clarified that paraprofessionals providing program support typically worked with students with high incidence disabilities and paraprofessionals assigned to 1:1 roles worked more frequently with students with low-incidence disabilities.

Training of Paraprofessionals

Larger school reform efforts have included and recognized the need for the adequate training and supervision of paraprofessionals serving students in schools. Both the Elementary and Secondary Education Act (ESEA) and the Individuals with Disabilities Education Improvement Act (IDEA, 2004) include specific language about the appropriate utilization of

paraprofessionals. Section 1119 of the ESEA requires local education agencies receiving Title I assistance to ensure that all paraprofessionals that have instructional responsibilities meet at least one of the following requirements: a) have at least two years of post-secondary education equivalent to at least 48 semester hours; b) have obtained an associate degree or higher; or c) demonstrated a rigorous standard of quality by passing an approved academic assessment measuring knowledge of and the ability to assist in instructing core academic content (reading, writing, and mathematics). In addition to specifying requirements around education and core content knowledge, Section 1119 of the ESEA mandates that a paraprofessional “may not provide any instructional service to a student unless the paraprofessional is working under the direct supervision of a teacher.” The reauthorization of IDEA (2004) required states to identify professional development areas required for staff, including paraprofessionals, to effectively support the academic and non-academic needs of students with disabilities.

A critical component in the effective utilization of paraprofessionals is the attention, time, and resources allocated to provide them with adequate training. The literature over the past 30 years is clear in insisting that paraprofessionals require appropriate training to complete their duties (Downing et al., 2000; Frank, Keith & Steil, 1988; Jones & Bender, 1993; Kaplan, 1982; Marks, Schrader, & Levine, 1999; McDonnell & Jameson, 2014; Parsons & Reid, 1999; Pickett, Likins, & Wallace; 2003; Pickett, Gerlach, Morgan, Likins, & Wallace, 2007; Riggs, 2001). Likins (2002) discussed three categories of training for paraprofessionals broken down in the following levels: preservice, on-the-job, and inservice training. Preservice training is provided before a paraprofessional begins their duties in the classroom. On-the-job training is the most common method utilized with paraprofessionals (Downing et al. 2000; Likins, 2002; Patterson, 2006). Inservice training generally focuses on general knowledge, skills, or responsibilities that

may not be directly related to the paraprofessionals current job duties or skills that are targeted for development over a period of time (e.g., general behavior management strategies, knowledge of common disabilities, content knowledge in academic areas) (Vasa, Steckelberg, & Pickett, 2003).

Downing, Ryndak, and Clark (2000) asked the participants in their small qualitative study about their perceptions regarding the training and preparation they had received for their positions. They reported the following:

Although all paraeducators stated that training was critical for doing their job effectively, the majority stated that they received no training when they were first hired. Instead paraeducators felt that they had been required to learn what to do on their own, as typified by the following comments: ‘They were desperate for someone at the time, so I had an interview. I received an explanation of the philosophy, [but then] it was a fly-by-the-seat-of-your-pants type of deal’ (p. 177).

Similar examples of limited preservice training have been discussed in other studies (French, 1998; Giangreco, Broer, & Edelman, 2002; Giangreco, Edelman, & Broer, 2001; Patterson, 2006).

The Study of Personnel Needs in Special Education (SPENSE, 2001) found that in the 3 years previous to the interviews, that 76% of the of the 888 paraprofessionals interviewed had received training in teaching academic concepts and skills, and 83% received training in implementing behavior management programs developed by teachers. The report fails to differentiate whether this training was provided through inservice district or workshop style professional development or through on-the-job training models. However, they did find that paraprofessionals who received more professional development in academic content reported

feeling highly skilled in performing related academic instruction than did paraprofessionals who received no professional development. It was also reported that paraprofessionals with more education spent significantly more time in professional development activities (Carlson et al., 2001).

While almost all studies providing data on the feelings of paraprofessionals show that they are appreciative of professional development opportunities, some have included findings that inservice workshop style professional development opportunities may be lacking in their direct application to the training needs of special education paraprofessionals (Downing et al., 2000; Giangreco, Broer, Edelman, 2002). One paraprofessional is quoted in a study explaining, “There are a number of different seminars and things that come up that we can go to. But to tell you the truth, I don’t know how close they come to really helping us in our jobs.” (Giangreco, Broer, & Edelman; 2002; p. 59). These studies have consistently reported that on-the-job training by certified staff is the primary means of training paraprofessionals; however, several barriers to successful on-the-job training are discussed in the literature. These include lack of time for training and monitoring (Giangreco, Broer, & Edelman, 2002), lack of shared planning time or collaborative meetings, teachers also report that they lack adequate preparation and training in supervision (Bauman, Silla, Stufft, 2010; Douglas, Chapin, & Nolan, 2016; French, 1998; Pickett, 1997).

Training Paraprofessionals to Implement Evidence-Based Practices

Two recent reviews of the literature have examined experimental studies that involve the training of paraprofessionals to implement specific evidence-based practices or strategies from the best practices literature. Brock and Carter (2013) completed a systematic review of the literature as related to paraprofessionals working with students with intellectual and

developmental disabilities. This review included a total of 13 experimental studies. Their review supported a general finding that given adequate training, paraprofessionals are capable of learning and implementing evidence-based practices that improve outcomes for students with intellectual and developmental disabilities. The thirteen studies in their review all used single subject research designs (a majority of experiments were multiple-baseline studies), with 40 participating paraprofessionals. Almost all of the studies included paraprofessionals working with elementary aged students.

In 10 of the 13 studies included in the Brock and Carter (2013) review, researchers experimentally tested whether the training package had an experimental effect on the implementation fidelity or an increase of paraprofessional behaviors in relationship to an instructional or behavioral strategy. In all, there were 29 demonstrations of an experimental effect out of 35 opportunities. The trainings given to paraprofessionals across all of the studies were multi-component and had a broad range of time spent in professional development (trainings ranged from 40 minutes in total to up to 9 hours). Brock and Carter (2013) stress that future research should examine the efficacy of teacher delivered professional development for paraprofessionals (special educator delivered trainings in particular). None of the studies included in the review used school based teachers as the trainers (all trainings were conducted by members of the research team with the exception of one study that included a private school based instructional coach). Another area of suggested future research includes the impact of training geared for larger numbers of paraprofessionals. The experiments in this review included relatively small numbers of participants.

Since the review by Brock and Carter (2013) highlighted the lack of research supporting teacher led professional development, there have been a small number of studies that have

focused on the special education teacher as the trainer or coach for paraprofessionals. Brock and Carter (2016) answered their own call for this type of empirical work by conducting an investigation where teachers trained four paraprofessionals to implement peer support arrangements within general education settings serving students with severe disabilities. The researchers provided a 4.5-hour training to the participating special education teachers that included training rehearsal by the special education teacher. The teachers then trained the paraprofessionals in a 2-hour training session utilizing researcher provided video models. One week after the initial training, teachers provided a one-hour coaching session that included at least 30 minutes of observation and performance feedback. The study demonstrated a moderate effect on peer interactions, but no visual impact on academic engagement after the training.

Another study including a coaching component, specifically Practice-Based Coaching (PBC), was completed by Mason et al. (2017). In this investigation, Mason and colleagues examined the combination of online module professional development combined with special education teacher provided PBC to train paraprofessionals to implement the steps of Discrete Trial Training (DTT). The findings revealed that five special education teachers that were competent in DTT (had previously been trained in DTT and demonstrated strong mastery of the practice) were able to improve DTT implementation across eleven paraprofessionals. The paraprofessionals implementation of the steps of DTT was not responsive to the online modules alone, but when given PBC by the special education teacher, intervention effect was visually evident across all participants.

Scheeler, Morano, and Lee (2016) used bug-in-ear technology with two special education teachers to have them train four paraprofessionals in a special education setting to increase their implementation of behavior specific praise statements. The intervention required very little

researcher support and demonstrated a strong effect in the training setting. Limitations of this study include the lack of generalization and maintenance data, and the absence of any measures on student performance. In another recent study Murphy et al. (2015) examined an intervention in which a special education teacher used video to train two paraprofessionals to implement the steps of Pivotal Response Training during recess. However, this study design was quasi-experimental (AB design) and failed to include any measures of treatment integrity; and thus, limited conclusions can be drawn from the findings.

Another systematic review from the autism specific experimental literature, covered training procedures to prepare paraprofessionals to implement evidence-based practices was completed by Rispoli, Neely, Lang, and Ganz (2011). This review included twelve studies, six of which overlap with the review completed by Brock and Carter (2013). The training procedures included in the studies reviewed by Rispoli et al., (2011) included the following: instructional videos, written instructions, verbal instruction, supervised practice, modeling, role-playing and supervisor feedback. “Of the 12 studies reviewed, seven reported positive outcomes and five reported mixed outcomes. Overall, this literature base may be described as limited given the small number of studies and the lack of clear training effects” (p. 386).

Subsequent studies published after these reviews include two examinations of paraprofessional implemented Pivotal Response Treatment (PRT) interventions to support social interactions for learners with autism spectrum disorder (Feldman & Matos, 2013; Koegel, Kim, & Koegel, 2014). Both reports demonstrated positive results in terms of paraprofessionals facilitating successful social interaction interventions after brief training on PRT practices resulting in improved social engagement outcomes for students with autism. Brock and Carter (2013) conducted a group comparison study examining a training package including video

modeling and coaching procedures to teach paraprofessionals to implement a constant time delay procedure. This study was the first to include a group comparison design in relationship to paraprofessional training. A small, but growing body of research shows that when given sufficient training and evidence based training procedures; paraprofessionals are able to implement a variety of EBPs and best practices resulting in positive outcomes for students. These results should come as little surprise, especially when considering the large and well-established literature examining training parents (Berkowitz & Graziano, 1972; Moreland, Schwebel, Beck, & Wells, 1982; Roberts & Kaiser, 2011), and peers of individuals with disabilities (Sperry, Neitzel, & Engelhardt-Wells, 2010) to implement instructional and social support strategies. Also, there is a dated, literature base examining the ability of residential and institutional staff to learn instructional support strategies (Gardner, 1972).

Future Directions

While there is broad discussion of paraprofessional issues in the literature covering many of the topics discussed in this review, there remain significant gaps in our understanding of effective paraprofessional training supports. While it is not surprising that paraprofessionals can be trained to implement evidence-based practices (Brock & Carter, 2013; Rispoli et al., 2011), there is a scarcity of evidence showing that teachers can effectively train paraprofessionals to implement EBP's even though the research indicates that paraprofessionals receive the majority of their training "on-the-job".

Knowing that the special education teachers that are tasked with supervision and training of paraprofessionals have limited preservice and inservice training in adult management, supervision, and training (Drecktrah, 2000; French, 2001); It seems obvious that training systems and supports that can be implemented in a manner congruent with the existing realities of

schools could have tremendous benefit. While coaching practices are promising and clearly linked to the effective implementation of evidence based practices in the professional development literature, it would be helpful to know more about the ways that teachers engage in, or take up coaching when given a curriculum to help direct and guide their training practices with paraprofessionals.

The focus on prescriptive forms of professional development to train discrete skills from the evidence based practices literature to paraprofessionals, could be misguided when there are still significant gaps in the use of EBP's (Burns & Ysseldyke, 2009; Kutash, Duchnowski, & Lynn, 2009) by the special educators responsible for delegating and designating the practices of the paraprofessional. Examining methods for teachers to enhance perspective taking and knowledge of paraprofessionals, as it relates to the situational practice and needs of their particular setting has merit, and deserves attention in the research. This is especially true in situations in which paraprofessionals are working across general and special education classrooms and navigating potential role confusion and disparate expectations from general and special education teachers. Typically paraprofessionals are reporting that they are being trained in workshops or didactic sessions outside of the context of the school and classrooms that they work in (through district mandated training). This practice has long been demonstrated ineffective in terms of the enactment of the practices and skills targeted in these types of professional development (Joyce & Showers, 2002).

In her review of professional development (PD) research, Kennedy (2016) examined different methods to transfer training or to use her words "facilitating enactment". Her review suggested that professional development practices that focused on strategies and insights, were often more effective in terms of teacher enactment and more impactful on student achievement

than professional development models that were centered on teaching prescriptive teaching skills. A focus on ‘strategies based’ PD involves training that helps educators know “when and why they should implement these strategies. The challenge for PD is to make sure teachers understand the ultimate goal well enough that they can decide independently when they will use each strategy.” (p. 955). PD that helps teachers make new insights arise from PD poses provocative questions that “force teachers to reexamine familiar events and come to see them differently” (p. 955).

This research project used a job-embedded training curriculum that combined the use of insight building and strategy based professional development with specific social facilitation strategies for paraprofessionals. The training incorporated perspective taking activities focused on fostering paraprofessionals’ “a-ha” moments regarding the importance of social relationships for all students and in deepening an understanding of the role that paraprofessionals play in being a facilitator or barrier to meaningful relationships. Teachers were encouraged to engage in and track their own training and coaching practices outside of the initial scripted curriculum. Understanding how teachers currently approach their training practices, and coaching procedures may be helpful in designing future professional development to foster the implementation of these practices.

CHAPTER 3

METHODS

The purpose of this study was to explore the effects of a job-embedded training curriculum implemented by special education teachers, on the social facilitative behaviors of paraprofessionals working with students with low-incidence disabilities in inclusive settings and subsequent effects on student social behavior. The study employed a concurrent, stacked AB design across participants (Gast & Ledford, 2010) to answer the primary research questions. Six special education teacher / paraprofessional / student triads were the focus of this study. Data were collected on both the paraprofessionals' social facilitation behaviors and the interaction between students with disabilities and their peers without disabilities during classroom activities in general education classrooms. Anecdotal field notes were gathered at the completion of every observation probe. Social validity questionnaires and rating scales were collected at the end of the data collection period.

The study employed three experimental conditions: Probe, Paraprofessional training in social facilitation behaviors by supervising special education teacher, Probe in generalization setting supported by the paraprofessional. The probe in a generalization setting was conducted in four of the six participating triads. The conditions were introduced within the context of a multiple probe design across participants (paraprofessional-student dyads), with the paraprofessional training in social facilitation skills implemented across participants as a stable baseline was established and as special education teachers were able to schedule time to train their paraprofessionals in the curriculum.

Participants, Setting, and Materials

Recruitment Procedures

After receiving University Institutional Review Board permission to proceed with the study, the researcher reached out to a director of special education of a large school district located approximately twenty miles outside of a major urban center in the Pacific Northwest. The special education director expressed interest in supporting and hosting the study, and directed the researcher to the central office administrator responsible for approval of outside research partnerships. After receiving district approval for the study, special education support specialists from each region of the district were contacted via email. They were sent the inclusion and exclusion criteria for participation in the study and asked to recommend schools and teachers that were including students with low-incidence disabilities in general education settings with the support of paraprofessionals.

The school support specialists responded with the names and contact information of fourteen special education teachers serving students with low-incidence disabilities in schools within the district. An introductory email with a brief explanation of the study and the basic inclusion and exclusion criteria was sent directly to the fourteen potential participants. The email requested teachers believing they met the inclusion criteria and were interested in learning more about the study, contact the researcher directly either via email or by phone. Seven teachers responded with interest in learning more about participation.

After obtaining additional information, six teachers agreed to participate and contacted paraprofessionals and parents about potential participation in the study. All of the interested special education teachers were offered the opportunity to be given a copy of and trained in the curriculum regardless of the subsequent consent of the paraprofessionals or families. If the teacher indicated that parents and paraprofessionals were interested in participating in the study, they were given the consent forms and the contact information of the researcher. Upon collecting

consent forms, all participants were 1) offered an in person opportunity to have questions or concerns answered directly by the researcher and 2) explained that consent to participate could be revoked at anytime. A verbal assent process was completed with each student after parental consent was obtained and prior to the start of data collection in the classroom. To develop familiarity with the staff and students before trying to seek assent, the researcher spent time in each special education classroom and general education classroom talking with students and staff about ongoing activities before attempting to obtain assent. See the Verbal Assent Script (appendix A) for more details on the process and language used. All students were given an opportunity to say yes or no to participating in the study. One student (Jordan) was not able to provide an unprompted yes or no response with her speech-generating device, or with written and color coded “yes” (green card that had the word yes on it) “no” (red card that had the word “no” on it) visuals. It was judged that Jordan’s demeanor did not suggest any stress or discomfort with participating in the study. She responded calmly to the verbal assent script and offered a high five to the researcher. If Jordan engaged in any distress or signs of discomfort during procedures of the study, her assent would be reevaluated, however, she appeared comfortable during all subsequent observational probes.

Student Participants

Participants included six students with low-incidence disabilities that attended suburban public elementary, middle, and high school programs within a large school district in the Pacific Northwest. To be included in the study, students had to (a) have a low-incidence disability and regularly attend instruction in a general education class with the support of a consistent paraprofessional (who consented to participate in the study), (b) have the means for basic functional communication (communication attempts are generally recognized and acknowledged

by others either verbal, non-verbal, or with augmentative and alternative communication systems), (c) qualify for social skills or social pragmatics as an area of specially designed instruction on their Individualized Education Program (IEP), (d) provide assent and parental consent, and (e) be on the caseload of a special education teacher who consented to participate in the study.

Table 1 reports the participants' demographic information including age, race, language, spoken at home, disability category, and available cognitive and adaptive behavior scores from school district evaluation documents.

Table 1.

Student Participant Demographics

Name	Age	Race	Language Spoken at Home	Eligibility Category / Disability	Cognitive	Adaptive Behavior
Deven	14 yrs 5 mths	Asian	Gujarati and English	Autism Spectrum Disorder	Wechsler Intelligence Scale for Children – Fifth Edition (WISC-V). FSIQ = 72, PR = 3, CI = 67-79).	Scores Not Available
Yasmin	12 yrs 4 mths	Hispanic	Portuguese	Health Impaired (Down Syndrome)	KABC-II Non-Verbal Index in the Lower Extreme range with a standard score of 46	ABAS-III General Adaptive Composite (GAC): Composite score = 63
Katie	12 yrs 1 mth	Caucasian	English	Multiple Disabilities (Partial Trisomy 5 and Monosomy 10)	C-TONI 2 - attempted but no score could be obtained	ABAS-III General Adaptive Composite (GAC) Composite score = 54
Jordan	16 yrs 8 mths	Caucasian	English	Autism Spectrum Disorder	C-TONI 2 - attempted but no score could be obtained	ABAS-II General Adaptive Composite (GAC) Composite score = 40
Alex	11 yrs 1 mth	Caucasian	Russian and English	Autism Spectrum Disorder	CTONI-2 Full Scale - 58 index score, <1st percentile	ABAS-II General Adaptive Composite (GAC) = 83
Reema	6 yrs 6 mths	Arab	Arabic and English	Autism Spectrum Disorder	DAS-II General Conceptual Ability - 85, 16th percentile	VABS-II (Adaptive Behavior Composite) = 72

Student Participant 1: Deven. “Deven” was a 14-year old male diagnosed with Autism Spectrum Disorder (ASD) who attended a suburban middle school. Both Gujarati and English are languages used in his home. Deven participated in two general education classes at the time

of this study, and was served for the remainder of his day in a self-contained program for students with intellectual and developmental disabilities located in his school. His general education classes included an 8th grade science class, and a Science, Technology, Engineering, and Math (STEM) elective class. Staff reported the majority of Deven's spontaneous language appears scripted, and that he is often non-responsive when adults and peers greet him or when he is asked simple conversation questions (e.g., "How are you?"). His IEP goals related to social skills focused on attending to and responding to social greetings and initiations. Deven qualifies for specially designed instruction in the areas of oral expression, listening comprehension, mathematics, writing, social and emotional skills, and organization. Deven received support in both of his general education classes from Kelcey (the paraprofessional included in this study).

Student Participant 2: Yasmin. "Yasmin" was a 12-year old female diagnosed with Down Syndrome who attended a suburban middle school. Portuguese is Yasmin's primary language at home, but English is spoken in the home setting as well. Yasmin participated in two general education classes at the time of this study, and was served for the remainder of her day in a self-contained program for students with intellectual and developmental disabilities within the school. Her general education classes included a 6th grade science class, and an elective art class. Staff reported that Yasmin can initiate and respond to social bids from peers and adults, but she typically only does so with familiar adults. Commonly Yasmin will only engage with others on topics related to her or that are high preference. To engage or maintain in social interactions with peers, she generally requires adult support and prompts to interact beyond one or two turns. Her IEP goal related to social skills focused on listening to a peer and responding with an on topic response. Yasmin receives specially designed instruction in the areas of adaptive skills, social skills, functional academics (reading / writing / math), and she receives speech language and

occupational therapies as related services. Miranda (paraprofessional) supported Yasmin in both general education classes.

Student Participant 3: Katie. “Katie” was a 12-year old female diagnosed with a genetic disorder (Partial Trisomy 5 and Monosomy 10) who attended a suburban middle school. English is the primary language spoken in the home. Katie participated in a 6th grade general education fitness class at her school at the time of this study, and was served in a self-contained special education program for students with intellectual and developmental disabilities in her school for the remainder of her day. Staff reported that Katie primarily communicates with adults at school using gestures, vocalizations, modified single signs, and her speech-generating device. She rarely communicates with peers at school but will sign “my turn” and successfully takes turns with peers in familiar high preference games and routines. Her IEP goal related to social skills focused on gaining a peers attention and making a request to play a game. Katie receives specially designed instruction in the areas of speech and language, social and emotional skills, behavior, functional academics (reading / writing / math), adaptive skills, and she receives speech language therapy, occupational and physical therapies as related services. Danielle (paraprofessional) supported Katie in her general education fitness class.

Student Participant 4: Jordan. “Jordan” was a 16-year old female diagnosed with ASD who attended a comprehensive suburban high school. English is the primary language spoken in the home. Jordan participated in two classroom settings with her general education peers at the time of this study. One class was an elective Physical Education period (walking / yoga) and the other was a regular homeroom period. Jordan was served in a self-contained special education program for students with intellectual and developmental disabilities in her school for the remainder of her day. Staff reported that Jordan is a non-verbal communicator that typically uses

gestures to engage with others only when prompted (waving and eye contact for greetings). She uses pictures / symbols to make requests and has started utilizing a speech generating device to communicate, but her accuracy and navigation skills on the device are just emerging. Her IEP goal related to social skills focused on the utilization of functional communication skills with peers and adults when given environmental cues (e.g., the availability of popcorn during a snack time). Jordan receives specially designed instruction in the area of social and emotional skills, adaptive skills, functional academics (reading / writing / math), and she receives speech and occupational therapy as related services. Pamela (paraprofessional) supported Jordan in her general education classrooms.

Student Participant 5: Alex. “Alex” was an 11-year old male diagnosed with ASD who attended a suburban elementary school. Russian is the primary language spoken in Alex’s home, but English is also used. At the time of this study, Alex attended a 5th grade classroom for 30 minutes of academic instruction with the classroom teacher, and he also participated with the class for their specialists’ period (PE, Music, and Library). Alex was served in a self-contained special education program for students with intellectual and developmental disabilities within the school for the other portions of his school day. Staff reported that Alex demonstrated the most difficulty with self-help skills and that he required adult directions or prompts to participate in most activities during the day. He performed best when given visual support cues and when activities included music. He responded to peers with support or prompts, but he very rarely initiated interactions. His IEP goal related to social skills focused on responding to questions from adults or peers and appropriate self-advocacy at times when he needed support. Alex qualifies for specially designed instruction in the area of social skills, reading, writing, and mathematics, and adaptive skills. He receives occupational therapy and speech therapy as related

services. Alex was supported in the general education 5th grade classroom settings by Nancy (paraprofessional).

Student Participant 6: Reema. “Reema” was a 6-year old female diagnosed with ASD who attended a suburban elementary school. Arabic is the primary language spoken in Reema’s home, but some English is also used. At the time of this study, Reema was attending a general education kindergarten class for approximately 90-minutes per day. She attended during the morning and afternoon circles and for some routine academic work and choice times during the school day. Reema was served in a special education program for students with intellectual and developmental disabilities for the remainder of her school day. Staff reported that Reema was quiet and could frequently get “stuck” in non-functional play routines (acting out the same routine with stuffed animals in the classroom, grabbing the teachers identification lanyard and examining it daily, or repeated readings of a torn alphabet calendar). Reema’s IEP goals related to social skills involved asking peers for items or objects appropriately, and independently responding to a peers initiation or request. Reema qualified for specially designed instruction in the areas of cognitive / preacademic skills, social and emotional skills, and adaptive skills. Additionally, Reema qualified for speech and occupational therapy as related services. Amanda (paraprofessional) supported Reema in her general education kindergarten classroom.

Table 2.

Student - Paraprofessional - Special Education Teacher Triads

Triad #	Student	Paraprofessional	Special Education Teacher	Setting	Setting of Primary Data Collection
#1	Deven	Kelcey	Deric	Middle School	8th Grade Science
#2	Yasmin	Miranda	Diana	Middle School	Art
#3	Katie	Danielle	Travis	Middle School	Fitness / PE
#4	Jordan	Pamela	Sara	High School	Fitness / Yoga

#5	Alex	Nancy	Emma	Elementary	5th Grade Classroom
#6	Reema	Amanda	Jennifer	Elementary	Kindergarten Classroom

Adult Participants

After participants consented to the study, demographic details for all of the participants were collected. Participating special education teachers and paraprofessionals completed a demographics questionnaire (see Appendix F) that was given to them by the researcher and collected prior to the completion of data collection. This questionnaire sought information about the teacher or paraprofessional including their age, race/ethnicity, primary language spoken, education level, length of time as a paraprofessional, length of time in their current school, length of time they have worked with the focus student, and what type of pre-service and in-service training they have received in their roles as paraprofessionals. Additionally, they were asked if they had received any training specific to supporting student interactions and relationships. Special education teachers completed a similar questionnaire (see Appendix E). Questions about pre-service and in-service trainings were focused on the topic of supervision and training of paraprofessionals. Special education teachers were also asked to respond about any training specific to supporting student interactions and relationships.

A total of six special education teachers and six paraprofessionals participated in the study across six different schools. Four of the participating special education teachers were female and two were male. All of the participating paraprofessionals were female. Years of experience for the special education teachers ranged from a low of 4 years teaching to a high of 15 years (a combined mean of 8.67 years teaching experience). Participating special education teachers ranged in age from 27-years old to 59-years old (a combined mean of 38.2-years old).

The participating paraprofessionals generally had less experience in the field than the participating special education teachers. The most experienced paraprofessional in the study had 5 years of experience, and the least experienced paraprofessional in the study had only been on the job for 4 months (combined mean of 2.38 years of paraprofessional experience). Participating paraprofessionals ranged in age from 23-years old to 61-years old (a combined mean of 39.8-years old). All of the participating special education teachers were self-reported to be Caucasian and native English speakers. Four of the participating paraprofessionals were self-reported to be Caucasian, one reported as African-American, and one as Hispanic. All of the paraprofessionals reported to be native English speakers. Table 3 summarizes the teacher and paraprofessional demographic information and the length of time that the special education teacher and paraprofessional have spent working together to serve the participating student.

Table 3.

Special Education Teacher and Paraprofessional Demographics

Triad #	Sped Teacher	Paraprofessional	Age	Years Experience	How long the pair have worked together with focus student (years)	Race
#1	Deric		44	4	1	Caucasian
		Kelcey	39	2		African-American
#2	Diana		59	15	1	Caucasian
		Miranda	23	1.5		Hispanic
#3	Travis		30	8	4 months	Caucasian
		Danielle	25	4 months		Caucasian
#4	Sara		36	14	2	Caucasian
		Pamela	55	5		Caucasian
#5	Emma		27	5	2	Caucasian
		Nancy	61	4		Caucasian
#6	Jennifer		33	6	1	Caucasian
		Amanda	36	1.5		Caucasian

Paraprofessionals in this study have all attended a district orientation that is given to all new paraprofessional and instructional aides. This training is 4-hours in length and given by an experienced paraprofessional and hosted at the district's central office building and covers all

To be included in the study paraprofessionals had to meet a set of inclusion criteria. The inclusion criteria required that paraprofessionals must (a) be assigned to support a student with a low-incidence disability in a general education classroom setting during consistent times, (b) be supervised by a special education teacher that consented to participate in the training component of the study, (c) provide support to the focus student in an additional setting to the primary general education classroom where observation probes will be conducted, and (d) have consented to participate in the research study.

Special education teachers in this study were asked to report about their educational backgrounds and training experiences as related to supervision and training of paraprofessionals and facilitating social interactions and relationships between students with disabilities and their peers. This information is summarized in Table 5.

Table 5.

Sped Teacher Education and Training

Characteristic	Deric	Diana	Travis	Sara	Emma	Jennifer
Education Level	Bachelors	Bachelors	Masters	Masters	Bachelors	Masters
Pre-service Training in Para Supervision	None	Very little. Has read about the topic in some books and articles	None	Some coverage in her teacher education program	One course in her undergraduate program covered this topic	None
In-Service Training in Para Supervision	None	None	Some coverage of the topic during his Master's coursework (completed a program in Applied Behavior Analysis)	None	She participated in a 2-hour professional development session on this topic	None
Training Related to Social Facilitation	None	Attended a conference session on the topic	Some coverage of the topic during his Master's coursework.	None	None	None

To be included in the study special education teachers had to meet a set of inclusion criteria. The inclusion criteria required that special education teachers must (a) have at least 2 years of experience in schools case managing students with low-incidence disabilities, (b) supervise paraprofessional(s) that currently support student(s) with low-incidence disabilities in a general education classroom setting, (c) case manage students with low-incidence disabilities that are included with general education peers for at least a portion of their day; (d) report that social interactions between students with low-incidence disabilities and classmates without disabilities is a desirable outcome for students included in general education settings; and (e) consented to participate in the study and to provide training to their paraprofessional on the social facilitation between students with disabilities and their peers without disabilities.

Setting

This study took place in a large, suburban school district in the Pacific Northwest serving over 29,000 students. A total of six schools were included in the study. Schools included one comprehensive high school serving 1,689 students in grades 9-12 (triad #4), one middle school serving 1,116 students in grades 6-8 (triad #2), another middle school serving 994 students in grades 6-8 (triad #3), and a final middle school serving 588 students in grades 6-8 (triad #1). The remaining school settings were two elementary schools (students kindergarten through 5th grade). The first elementary school served 390 students (triad #5), and the other elementary school served 482 students (triad #6). A breakdown of relevant school demographic data is summarized in Table 6.

Table 6.

School Demographics / Information

Triad #	School Type	Size of School	% Free or Reduced Lunch	% Students of color	% Students with IEPs	Type of Classroom	# Of students in Class
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#1	Middle	588	10.0%	23.7%	11.8%	8th Grade Science	31
#2	Middle	1116	4.6%	50.2%	9.7%	Art	27
#3	Middle	994	17.2%	50.7%	9.4%	6th Grade PE/Fitness	30
#4	High	1689	4.6%	26.7%	11.7%	Yoga / Walking	28
#5	Elementary	390	22.0%	44.2%	18.5%	5th Grade Classroom	21
#6	Elementary	482	6.0%	40.3%	14.8%	Kindergarten	22

Student Participants

Setting #1 - Deven attended an average sized suburban middle school and was observed participating in his 8th grade science classroom. The classroom arrangement included 16 tables large enough for two peers to be seated next to each other facing the front of the classroom (31 total students in the classroom). The classroom consisted of a smart board and the teacher's presentation area. Along the perimeter of the classroom (with the exception of the front of the room) was counter space and cabinet storage. Deven was consistently seated at the last table in the first row closest to the entrance door of the classroom with the paraprofessional (Kelcey) seated next to him at the table in the same manner that other students were paired at their tables with a peer. He was not paired with a general education peer in this table arrangement. The activities completed during this time varied from day to day depending on the unit or lesson the teacher was teaching. Data was only collected on days that social interactions were an acceptable part of the activity or lesson and were 10-minutes in duration. Generalization probes were not conducted with Deven due to his absence on the day scheduled to gather a baseline generalization probe.

Setting #2 - Yasmin attended a large suburban middle school and was observed participating in her elective art class. The classroom arrangement included 8 large art tables in

the main area of the classroom. The tables were large enough to accommodate 8 students. There were 27 students typically in attendance in the art class. Students were grouped at the tables in groups of 6 to 8, to work on their art projects and to listen to teacher instruction and modeling. Along three walls of the classroom were counter spaces with cabinets below for material storage. The back of the classroom included large tables for additional working space and storage. The teacher's desk and computer station were set up in the far back corner of the room near the door to the adjoining shop class. Yasmin would attend the class with the support of Miranda (paraprofessional), who was in class to support both Yasmin and another peer from the self-contained program also enrolled in the art class. Two students enrolled in a peer tutor program supporting students from the self-contained classroom in a peer support arrangement also supported Yasmin and her peer. These students were not enrolled in the art class, but were instead enrolled in a peer tutor elective. During baseline observations, Yasmin, her peer from the self-contained program, Miranda, and two peer tutors were seated at the back table in the classroom closest to the teacher's desk. Two general education peers joined them in this arrangement. Typically the students at this time were engaged in working on a drawing or art project at their group tables during these probes. Generalization probes were conducted in Yasmin's 6th grade science classroom.

Setting #3 - Katie attended a large suburban middle school and was observed participating in her 6th grade fitness / physical education class. The fitness class typically consisted of 30 enrolled students. Katie attended the class with the support of Danielle and up to two peer tutors. Peer tutors were enrolled in an elective period that was a peer support arrangement; for their period as peer tutors they attended either the self-contained classroom or a general education classroom to support and engage with a student with disabilities. Several

students from the self-contained program were also enrolled in the same period of fitness as Katie. Consistently 3 other students from Katie's self-contained classroom attended fitness with the support of their paraprofessionals. The two peer tutors sometimes engaged with or supported these three students in addition to working with Katie. The class met first in the gymnasium (either the main gymnasium area or an adjoining weight room area) and then either stayed in the gymnasium to do their activities, or they moved to the outside fields or tennis courts. 10-minute observation probes were consistently conducted 10 minutes into the start of the fitness class period. The observation occurred 10 minutes after the start of class when students were doing warm ups or listening to the teacher explain the activity for the day for the first couple of minutes of the observation period, and the remainder of the observation period occurred during the sport or activity for the day. Generalization probes were not conducted with Katie, as she did not attend any other general education courses.

Setting #4 - Jordan attended a large suburban high school and was observed participating in her elective yoga / walking class. There were 28 students typically present for the yoga class, which met in a smaller sized gymnasium area with a large mat on the floor. The classroom space was large enough to easily accommodate all of the students and the teacher and a paraprofessional, with yoga mats laid out. The gym was square in shape and had an internal entrance to the school on one side of the gym and an external entrance to the field area of the school on the other side of the gym. There was a large projection screen and a computer set up to project breathing and yoga videos to the class. The class activities consisted of yoga practice or walking on the school grounds or in the community. Due to block scheduling at the high school, this class only met three days a week (Mondays, Thursdays, & Fridays). Jordan consistently participated in the class from the back area nearest to the internal entrance to the school. During

walking activities, Pamela (paraprofessional) always accompanied Jordan in close proximity, and she quickly lost pace with the rest of the class. Observations occurred during the first 10 minutes of the yoga / walking period. Generalization probes were conducted in Jordan's homeroom class.

Setting #5 - Alex attended an elementary school of 390 students. He participated in a general education 5th grade classroom with 21 other students. A peer from the self-contained program accompanied Alex to the general education setting. Both students were supported by Nancy (the paraprofessional). The classroom arrangement in this setting varied across the study. There were desks in the middle of the room with a smart board and teacher presentation area in the front. At times the desks were arranged in groups of four to five students. At other times the desks were arranged in rows. There were a few desks and chairs set up on the sides of the classroom, but the students did not access these. There was a sink and cabinet area in the back corner of the room nearest the door of the class. A bank of cubbies and storage cabinets partitioned the sink area from the rest of the back of the classroom. In the middle back of the classroom was a large table that could accommodate up to 6 students. Next to this table was the teacher's desk area. Typically during baseline, Alex and his peer from the self-contained program were seated at the back table with the support of Nancy. Alex and his peer joined the classroom for thirty minutes. During this time frame the general education teacher engaged the students in a variety of activities, and this changed frequently. For example, students completed make-up work in social studies or science lessons, or completing vocabulary lessons or reading to self or with a peer. Data probes were only conducted during activities that allowed for social engagement or interactions for the students. Generalization data probes were conducted in the physical education classroom setting that Alex would participate in with his 5th grade peers.

Setting #6 - Reema attended a suburban elementary school of 482 students. She joined a full day kindergarten classroom of 22 students along with a peer from her self-contained program and with the support of Amanda (paraprofessional). The kindergarten classroom had group work tables set up in the middle of the room that accommodated 6 students. In addition, that classroom also had a library or book area, an open area for large group meetings (circle time), a bathroom, and teacher's workspace. During baseline observations, Reema and her peer from the self-contained classroom were seated in a table group at the center of the group tables. Two general education peers were also seated at this table during observations. Observations occurred during morning table work at worktables. Once the work was completed students were allowed to choose a book and read to themselves or read with peers. Generalization probes were conducted in the afternoon at a large group floor activity called friendship circle.

Materials`

The intervention employed in this study was a published curriculum for paraprofessional training entitled *Supporting Students with Disabilities in Inclusive Schools A Curriculum for Job-Embedded Paraprofessional Development (freely available)* (Ghere, York-Barr, & Sommers, 2002). The curriculum covers seven units about practices relevant for inclusion of students with disabilities, however, since the focus of this study was on training paraprofessionals to facilitate social interactions, only the unit related to interactions and student relationships was used in the study. Special education teachers were given a copy of the training curriculum with two adaptations (additional social facilitation strategies were added to the training materials, and additional steps were added to the follow up activities). This training program was selected as it is available for download at no charge through the University of Minnesota's Institute of Community Integration and can be acquired easily by practicing teachers interested in using it in

training. Additionally, the curriculum replicates the training procedures that were found to be effective in previous research when the training was conducted by the researcher (Causton-Theoharis, 2003; Causton-Theoharis & Malmgren, 2005; Malmgren, Causton-Theoharis, & Trezek, 2005).

The specific unit of the training program used in this study consisted of direct instruction regarding the facilitation of interactions between students with and without disabilities (see Appendix C). The curriculum package was adapted slightly from the way it has been used in previous research as additional details and examples of social facilitation strategies were incorporated into the curriculum. The additional social facilitative behaviors were first described by Carter et al., (2015), and adapted by this researcher for inclusion in the training curriculum. The facilitation behaviors in the original curriculum included the following five strategies: (1) modeling ways to interact, (2) highlighting similarities, (3) identifying varied strengths and differences, (4) teaching interaction skills, and (5) interpreting behaviors. The facilitation strategies provided to the teachers and paraprofessionals as a part of this study included the original five, but added three more strategies, including: (a) redirecting student interactions to peers, (b) directly asking peers to provide assistance or to engage, and (c) increasing proximity of the student with disabilities to their peers (and vice versa) (Carter et al., 2015). (see appendix D for Handout 8).

Additional steps were added to the follow up activity included in the published training curriculum. In these steps, paraprofessionals were asked to review the list of social facilitation strategies (appendix D), and to select and write down two or three that appeared to be potentially useful in the classroom setting being targeted for intervention. After writing down two to three strategies, paraprofessionals were prompted to script out specific language they would use in

demonstrating these strategies. Finally, paraprofessionals were asked to take these written strategies and scripts and share them with the general education classroom teacher, to ensure that the targeted strategies were appropriate for the classroom and activities that were being targeted, and to gather input from the general education teacher about the implementation of these strategies. Special education teachers were asked to ensure that these follow up conversations, occurred with the general education teacher and that three copies of the written strategies and any feedback from the general education teacher were made. One copy of the strategies and feedback was to be kept by the paraprofessional, one by the special education teacher, and one by the researcher.

Experimental Design and Procedures

This study utilized a concurrent, stacked A-B across participants design, which involves repeated measurement of the dependent variables in baseline and after the introduction of the independent variable across participants (Gast, 2010). All participants began the study in the baseline condition. Baseline conditions were maintained across all participants for at least 5 observation probes or until a stable baseline was established. As this study was completed with practicing classroom teachers working with several paraprofessionals near the end of the school year, a concurrent stacked A-B design was utilized, in place of a traditional multiple baseline design to ensure that sufficient observation probes could be gathered during the intervention phase. Once baseline was deemed to be stable and sufficient, teachers were asked to train their paraprofessionals as soon as they were able to schedule the time within, before, or after the school day. Introducing the independent variable in the staggered fashion that is traditional with multiple-baseline research designs was judged to be limiting in this applied situation with few school days remaining in the year (Harvey, May, & Kennedy, 2004). The order in which the

intervention was introduced to participants was based only on stable baseline patterns (i.e., flat trend for of student social interactions and paraprofessional social facilitation) and the ability of the special education teacher and paraprofessional to schedule an agreeable time to conduct the training.

Baseline procedures.

During baseline probes, teachers and paraprofessionals were instructed to provide support to students with low-incidence disabilities as would normally occur during a typical school day. Special education teachers were instructed not to provide any training to the participating paraprofessionals directly related to social interactions. Paraprofessional behavior related to facilitating social interactions between the focal student and their peers in general education is described in the results section. For each of the participants, the activities described in the setting section were the activities that were observed. Each session, the focal student was seated in the same classroom placement as usual. This consisted of access to the classroom peers without disabilities and the student's paraprofessional.

Baseline data was collected during typical classroom activities in the training setting and in an additional non-training setting (generalization probe) for triads numbers 2, 4, 5, and 6, prior to any training being implemented by the participating special education teachers. This phase established the natural frequency of the target behaviors (dependent variables) prior to the introduction of the training intervention. Baseline procedures were in place across all triads until a stable baseline was established for both social facilitation behaviors and social interactions with general education peers (a minimum of at least 5 observational sessions). Stability was assessed via visual inspection of the charted baseline data and through using the split-middle trend analysis technique (White, 1972).

Teacher Training

Each participating special education teacher met with the researcher to go through the training unit on social facilitation from the curriculum and to plan for conducting the training with their paraprofessional using the same unit and materials. Training times varied across participating special education teachers. The longest training was completed in 62 minutes and the shortest training was completed in 36 minutes. The complete training times are detailed in

Table 7.

Training Times by Special Education Teacher

Triad # and Teacher Name	Date of Training	Training Time	When Training Occurred	Where Training Occurred
#1 Deric	4/20/17	40 minutes	Planning Period	At Deric's desk in classroom
#2 Diana	5/4/17	36 minutes	Planning Period	At a work table in classroom
#3 Travis	5/12/17	44 minutes	Planning Period	In a teacher work room
#4 Sara	4/19/17	62 minutes	After School	At a work table in Sara's classroom
#5 Emma	5/8/17	40 minutes	Planning Period	At a work table in Emma's classroom
#6 Jennifer	4/26/17	48 minutes	Planning Period	At a work table in Jennifer's classroom

Because of the individual nature of the training and because the training was provided during a teacher's planning period or after students left for the day, the date and actual time to train each individual special education teacher varied. The overall mean average of training time was 45 minutes across all of the participants (a range of 36 minutes to 62 minutes).

Teacher training for this study consisted of an introduction and overview of the curriculum, modeling of the five steps of the curriculum included in the targeted unit, and a brief discussion of the ways in which the curriculum is aligned with best practices in adult learning and professional development. The researcher modeled completion of each step of the curriculum as they went through and completed the sections of the curriculum with the special education teacher. Special education teachers were told that the curriculum and training session

was a model for them to replicate with their paraprofessional. The steps of the curriculum were broken into five components, including 1) a perspective taking activity and discussion of social relationships using a Circle of Friends model (Falvey et al., 2000), 2) a discussion of the importance of supporting social interactions and relationships for students with disabilities, 3) a discussion of the paraprofessional's role in facilitating social interactions, 4) review and discussion of the specific social facilitation strategies (Carter et al., 2015); and 5) a description and discussion of how to apply the new knowledge and skills in a specific follow up activity for the paraprofessionals.

Special education teachers received a checklist of the curriculum components to be filled out as they used the curriculum to train their paraprofessionals (see appendix G). Teachers were given complete copies of the training manual and paraprofessional handouts in a 3-ring binder. The researcher provided the teacher with a set of handouts already photocopied and stapled to be used when training their own paraprofessionals for the study. Permission was received from each of the participating special education teachers to audio record the training sessions. To ensure treatment integrity, the researcher and a research assistant (a Master's student in the school psychology program) reviewed these recordings with a fidelity checklist detailing the steps of the curriculum (see appendix H).

During teacher training, the researcher explained why he thought it was a relevant training package to consider using with paraprofessionals. Included in this explanation was a brief overview of what we know from the adult learning literature. Including a) a discussion that adults learn performance skills best when their learning target is connected to something that is relevant to them, b) when the importance and benefits of the learning target is explained, c) when learners are provided with a clear and succinct written description and demonstration of the

targeted performance skill, d) that the adult learner is engaged in actively learning the skill in applied scenarios and situations, and e) when they receive feedback and problem solving around their performance of the skill from their trainer (Dunst, Bruder, & Hamby, 2015; Parsons, Rollyson, Iverson, & Reid, 2012).

After the discussion of adult learning practices, teachers were encouraged to make time available to discuss and problem solve the implementation of the social facilitation strategies outside of the training with their paraprofessional. They were also encouraged to make time to go into the general education setting and model, observe, and give feedback to the paraprofessional around the implementation of the social facilitation strategies. Special education teachers were given a training tracking sheet to note down the dates and type of subsequent trainings they may have provided their paraprofessional throughout the intervention phase of the study (see Appendix I).

Intervention

Special education teachers conducted the training with paraprofessional when told by the researcher that the training could commence as sufficient evidence had been gathered about baseline behaviors. Teachers began implementing the training within two days of being asked to train with their paraprofessionals. Details of when the special education teacher completed the initial training with the paraprofessional are detailed in Table 8.

Table 8.

Training Times and dates by Special Education Teacher/Para Pairs

Triad # and Teacher/Para Name	Training Date	When and Where Training Occurred	Length of Training
#1 Deric/Kelcey	5/10/17	In Deric's classroom after students left for the day	54 minutes
#2 Diana/Miranda	5/10/17	After school in the classroom during regular staff meeting (Diana trained all of her paraprofessionals in the curriculum at this time)	*Completed in 60 minute meeting window

#3 Travis/Danielle	5/18/17	In teacher work room, during state mandated testing window in the morning	89 minutes
#4 Sara/Pamela	5/10 & 5/12 & 5/22**	In Sara's classroom before school	73 minutes
#5 Emma/Nancy	5/17/17	In Emma's classroom during planning period (Emma arranged with her administrator to release Nancy from other duties at this time)	*Completed in 50 minute planning period
#6 Jennifer/Amanda	5/9/17	In Jennifer's classroom after school	48 minutes

* Audio recordings were not available for these training sessions, and teachers were only able to give an approximate length of time of training procedures.

**Sara trained before school after the paraprofessional arrived, but before the student instructional day began. This time frame was short. She planned on completing the training in two sessions, but needed to complete a third training session due to time shortages. Sara injured her back after the second training session and was out of school for several days and was unable to complete the training until 12 days after the initial training was initiated

Initial paraprofessional training session. Once teachers were trained and baseline levels were deemed stable. Special education teachers delivered trainings to their paraprofessionals. All but one teacher provided the training in individual one-on-one training sessions. Teacher number 2, Diana conducted the training with all of her paraprofessional team during their normally scheduled team meeting time. Training times varied by participant (see Table 8.) ranging from a low of 54 minutes to a high of 89 minutes, with a combined average mean of 66 minutes across the known durations (it should be noted that teacher number 2, conducted her training session after being told by the researcher that training could commence, but without sharing with the researcher when the training session was scheduled to occur so an audio recording of the session was not gathered. Teacher number 5, video recorded her training session with her paraprofessional, but never shared the recording with the researcher despite multiple requests to obtain the recording. In these cases the length of the training is unknown, but estimated based on the verbal reports of the teachers. Both teachers 2 and 5 did complete the training fidelity checklist (see “Study Training Checklist in Appendix G).

The special education teachers completed the training by following the curriculum and having a discussion with the paraprofessionals about the importance of social interactions and the mediating effects adults can have on fostering relationships and interactions for students. The teachers all had the paraprofessionals complete the follow up questions and activities included on Handout 11 of the training curriculum. In this handout the paraprofessionals detailed the steps of their plan to use specific social facilitation strategies in the general education setting for the focus student.

All of the participating paraprofessionals followed up with the general education teachers after completing the initial training with the special education teacher. However, some of these follow up conversations happened at different points after the training. Situations in which the paraprofessional had followed up several days after the initial training are marked on the data chart for triads' number 3 (Danielle), 5 (Nancy), & 6 (Amanda). Sara from triad number 4 was the only special education teacher to directly attend and participate in the sharing of strategies with the general education teacher. Other special education teachers connected or followed up with the general education teachers in later conversations or reviewed their feedback on the written notes taken by the paraprofessional.

In order to understand the existing coaching and training practices of special education teachers, each teacher was asked to document any follow up training practices (i.e., discussing the social facilitation strategies with the paraprofessional before or after their time in general education, observing the paraprofessional in the general education setting and providing performance feedback, providing shoulder to shoulder coaching in the general education setting, modeling the social facilitation strategies for the paraprofessional in the special education or

general education setting) they engaged in during the intervention phase of the study (see Special Education Teacher Training Tracker in Appendix I).

Practice-based coaching

During the intervention phase of the study, if the dependent variables of main interest to the study (social facilitation behaviors of paraprofessionals and social interactions of the focal student with peers without disabilities) failed to increase over baseline levels, or were at zero for 3 or more days, the special education teacher was directed to engage in a practice based coaching procedure. Practice based coaching practices were outlined to teacher in a short meeting with the researcher (from 5-10 minutes). The coaching strategies were verbally explained and the special education teacher was asked to follow up with the paraprofessional to engage in the practice based coaching procedures. The researcher handed or emailed the special education teacher a short description of practice based coaching practices (see Coaching Support for Social Facilitation in Appendix J). The subsequent coaching practices were not monitored beyond tracking completed by the special education teacher through the special education teacher training tracker form that was provided to the teachers at training.

Teacher Procedural Fidelity

Teacher procedural fidelity was monitored by tracking implementation of the steps of the intervention and the implementation of the training of paraprofessionals. Intervention procedural fidelity was collected by using the study training checklist (see initial paraprofessional training session). Procedural fidelity of the training to the paraprofessional was monitored by the researcher and the research assistant reviewing the audio recordings of the paraprofessional trainings using the treatment integrity checklist (see Treatment Integrity Checklist in Appendix H).

The practice based coaching model consisted of a planning meeting, focused observation, and feedback. The planning meeting was used to gather information from the paraprofessional about the current implementation and success of the social facilitation skills, and to plan on a focus for subsequent training practices that will accompany the observation. The second phase consisted of the teacher scheduling an observation with planned coaching practices (i.e., shoulder to shoulder coaching of practices in the classroom, modeling of social facilitation strategies in the classroom, collection of observation notes or data on social facilitation in the general education classroom to be shared with the paraprofessional). The final phase of the practice based coaching model was to hold a feedback meeting after the observation. In the feedback meeting teachers were directed to (1) share positive and specific corrective feedback with the paraprofessional about the social facilitation strategies observed (or not observed) during the observation, (2) identifying for the paraprofessional one or two specific social facilitation strategies to focus on in future coaching activities, (3) engage in coaching practices during the feedback meeting (modeling/role-play/discussion), and (4) specify when and how follow up will occur with the paraprofessional.

Practice-based coaching. Once the initial training was completed with the paraprofessional, each paraprofessional was given a weekly self-rating scale in which they were asked to rate their implementation of the social facilitative behaviors they learned about in the training. Each Friday paraprofessionals were reminded by the researcher to complete their self-evaluation on the Weekly Paraprofessional Self-Rating Scale (see appendix K). This scale was a 4-point likert scale in which paraprofessionals self-rated themselves on the amount of opportunities they utilized to engage in social facilitation behaviors in the training setting. The rating scale ranged from 1 (none of the opportunities) to 4 (all of the opportunities).

Measurement of the Dependent Variables

The dependent variables for this study included 1) social facilitative behaviors of the paraprofessional and 2) social interactions between the focal student and a student without disabilities enrolled in the general education classroom. For the purposes of this study peers without disabilities were defined as those students without disabilities who were enrolled in the general education class. This definition excluded interactions with peer tutors not enrolled in the class for both triads number 2 & 3. Although interactions and paraprofessional social facilitation between peer tutors and focal students were tracked and noted on the data collection tools, this data was not included in the present analysis.

Peer interactions were defined as any two-way communication or any verbal or active non-verbal behavior that resulted in another person to have a verbal or non-verbal response. These interactions may include questioning, directions, gesturing, nodding, following through on a verbal direction given by the peer, physical or verbal resistance to an initiation, obvious change in expression or intentional eye contact as the result of an initiation, responding to or accepting physical support (Beckstead & Goetz, 1990).

Social facilitative behavior of the paraprofessional was defined as any verbal or active non-verbal behavior from the paraprofessional or another adult that resulted in a peer interaction as defined above (only social facilitation behaviors that resulted in peer interactions were coded in the data sheets. Social facilitation strategies that did not result in interactions were noted in the data sheets but not coded as a successful social facilitation behavior). These social facilitation behaviors include: 1) modeling ways to interact with the student with a low-incidence disability, 2) highlighting similarities between the focal student and their peers, 3) identifying strengths of the focal student to peers, 4) direct teaching of interaction skills to the focal student or their

peers, 5) interpreting focal student behaviors for peers, 6) redirecting classroom peers to interact directly with the focal student, 7) directly asking peers to provide assistance or to engage with the focal student (or directly asking the focal student to interact or engage with peers), and 8) increasing the proximity of focal student to classroom peers (see appendix D).

Other relevant events or activities directly related to peer interactions or facilitative behaviors were noted directly on the data tool used to measure the dependent variables in the notes column. On the back of the data tool were field note prompts that allowed the observer to reflect on the lesson or activity and student grouping observed during the observation, as well as the general or specific nature of the social interactions that occurred. Additional prompts in the field notes asked about any adults other than the paraprofessional who may have facilitated or impacted social interactions during the probe, and a chance to explain in writing the general proximity of the paraprofessional to the student over the course of the observation (this was also tracked as more or less than 3 feet from the student in the quantitative data collection form). (see PIPFBOI with field notes, appendix L).

Data Collection

Both dependent variables were measured using the Peer Interactions and Paraprofessional Facilitative Behavior Observation Instruction (PIPFBOI) (Causton-Theoharis, 2003). The PIPFBOI was developed by adapting a previously utilized interaction measurement tool called the EASI Engagement Scale (Beckstead & Goetz, 1990). Adaptations to the EASI included a shift from a partial interval recording procedure to a frequency recording procedure. The PIPFBOI was used due to its inclusion as the measurement tool in previous studies that examined paraprofessional social facilitation and social interactions between students with disabilities and their general education peers (Causton-Theoharis & Malmgren, 2005; Malmgren,

Causton-Theoharis, & Trezek, 2005). The PIPFBOI (see PIPFBOI in appendix L) is a data collection tool that allows for the simultaneous measurement of student social interactions between the target student and other classmates, the catalyst for each interaction (i.e., facilitated by paraprofessional, another adult, or spontaneous interaction between students), adult social facilitation behaviors, and identification of the proximity of the paraprofessional to the target student.

Either the primary data collector or a secondary data collector collected data in the general education classroom during 10-minute observation probes. The primary data collector was the researcher. The secondary data collectors were two graduate students from the College of Education. The first research assistant was a third year doctoral student in the special education program, and the second assistant was a master's student in the school psychology program.

The PIPFBOI plus field notes tool was used by all three observers that collected data during the course of the study. Before commencing with an in person observation, the observers noted pertinent information on the top of the data collection sheet such as student paraprofessional number, observation number, date, start time of observation. During the observation, observers attempted to remain within 10-15 feet of the focal student to capture the reciprocal social interactions and paraprofessional facilitation strategies during the live probe sessions. This at times required the observers to move around the classroom to stay within hearing range of the student during the class. Observers noted the start time of the observation period on the top of the data sheet and set a 10-minute timer on a smart phone or noted the time on the classroom wall clock to start the data collection probe. During inter-observer agreement data collection probes, both observers made an effort to remain in close proximity to one another

so as to both be viewing and hearing the interactions and facilitation strategies from a similar perspective or vantage point (Bailey & Burch, 2002).

Observer Training

Three trained observers collected data on the dependent variables during the course of this study. Prior to the start of formal observations for baseline data collection, the researcher trained the data collectors in the use of the PIPFBOI and field notes. Data collectors were given access to the PIPFBOI and operational definitions of both dependent variables. These were reviewed and discussed. The researcher answered any questions about the coding definitions of the dependent variables and the data collection tool. The two observers met in an office at the University campus to review paper versions of the measurement system and the coding directions. Reliability training consisted of watching video clips of children with disabilities being supported by paraprofessionals in social situations (recess and lunch). Three separate videos were used as a part of this training. The first video was watched by both observers while the primary researcher explained how the interactions and social facilitation behaviors on the video should be coded based on the coding directions and operational definitions. The trainee was able to ask questions and the video was stopped and rewound to watch interactions and facilitation strategies a couple of times until both observers felt comfortable with the codes and agreed on the interactions to be noted. The next video was coded simultaneously by the researcher and observer while watching the video for the first time using the PIPFBOI. After the video ended, the observers compared and discussed their coding.

This process was repeated until both observers achieved over 90% agreement during the training videos. Once all observers had reached 90% agreement on video examples, data collectors practiced during live observations. Live observations occurred in the study classrooms

with consenting participants at a time that differed from the typical data collection schedule. The second live training observation probe with research assistants achieved agreement levels of over 90% and 100% agreement between researcher and data collector.

Data collection sessions occurred when it was determined that classroom activities in which students have the opportunity to actively engage with each other (i.e., group work, partner reading, work tasks that that can be completed while students speak with each other to complete the work) were available. Activities that would discourage student interactions such as formal testing or assessment periods, silent reading times, lecture or direct instruction in which students are expected to only respond to the teacher, were determined not to be appropriate periods of data collection. A note was made on the data sheet for any time in which an observation probe could not be completed on that day.

Interobserver Agreement

To calculate interobserver agreement a total agreement approach was used in this study (Kennedy, 2005). Since this study used frequency ratios, the inclusion of total agreement was appropriate. Frequency ratios are indicated when measuring free operant behavior that has no theoretical limit or restrictions on the number of responses that can occur within a specific time period, such as peer interactions (Kazdin, 1982). Interobserver agreement data was collected in four of the six school sites that were a part of this study. Two data collectors regularly conducted data probes together in schools number 3, and 6. Interobserver reliability data was also gathered at sites number 1 and 4. Overall interobserver reliability was calculated across 31 observational probes out of a total of 135 observational probes completed across the study, representing 23% of probes with IOA calculated. In those 23% of observations with IOA calculated, there was a

range of total agreement with a low of 50% total agreement and a high of 100% agreement.

When all of the IOA totals are averaged together, overall mean IOA for the study is at 95.57%

Generalization Phase & Practice Based Coaching

Following training by the special education teachers, data was collected using the PIPFBOI and inputted into a spreadsheet and charted in a line chart through MS Excel. These charts were reviewed daily to examine trends and changes in social facilitation and interactions. In cases in which social facilitation or interactions were decreasing or flat after the paraprofessional had been trained and after they had reviewed and shared the social facilitation strategies with the general education teacher, some data based decision rules were used to guide next steps. If three to five probes of a downward trend or no social facilitation was observed, then the researcher would consider requesting that the participating special education teacher engage in practice based coaching practices with their paraprofessional around social facilitation strategies. Practice based coaching was requested across 4 of the 6 triads (numbers 1, 2, 3 and 5).

As the school year was coming to a close and data collection was no longer a viable option, the researcher collected observation probes in a generalization setting. These probes utilized the same procedures and definitions as the observation probes in the training setting. The only difference was the probe was conducted in a classroom, time, or activity that was different from the training session. The data from these probes was charted and analyzed along with the data collected in the training setting.

Data Display

Data were charted by plotting the calculated rate of social interactions for each observation probe and the rate of paraprofessional social facilitation behavior for each paraprofessional student pair. Rates per minute were recorded on the y-axis and observational

probe numbers were recorded on the x-axis of the graph. The data was interpreted utilizing the following procedures.

Data Evaluation

Consistent with the tradition of single subject research design, visual data inspection was the primary analytical tool for examining the data for intervention effect (Kazdin, 1982; Kennedy, 2005). The effects of intervention should be visually evident in terms of change in level or trend after training or practice based coaching is implemented. Training and practice based coaching was marked on the visual charts through the use of phase change lines (vertical lines on the chart). One would anticipate that an effective training would result in visual differences between baseline and treatment phases of data. To aid in the objective analysis of changes in level, percentage of nonoverlapping data (PND; Scruggs & Mastopieri, 1998) was calculated across baseline and intervention phases for each paraprofessional student dyad. Average means across phases of the study were calculated and compared across both social facilitation behaviors and social interactions. Additionally, information from the field notes provided qualitative data to provide more information about the events that occurred during each of the observation probes.

Social Validity

After the experiment was completed, the researcher asked each participating special education teacher and paraprofessional to complete rating scales judging the acceptability of the training procedures. The surveys asked structured response questions using a 5-point likert scale (from strongly disagree to strongly agree). Special education teachers were asked the following questions: (1) this training package would be appropriate for working with a variety of paraprofessional staff, (2) this training was beneficial for me to conduct with the

paraprofessional included in the study, (3) I would use this training to train other paraprofessional staff on social facilitation, (4) this training was consistent with common sense and good practice in helping staff to work effectively, (5) I would recommend this training package to other special education teachers, (6), this training package fits well with my existing paraprofessional teaming (supervision and training) procedures, (7) I was able to implement the training procedure in a timely manner, (8) the training package was effective in training my paraprofessional to implement the targeted skills, (9) I can effectively use this training package to train paraprofessionals with little or no changes to my program and teaming structures (e.g., team meetings, daily debriefing practices, etc.), (10) I like the procedures included in the training package that I was asked to use with my paraprofessional, (11) this training package helped me to be a more effective trainer, and (12) this training package resulted in improved social experiences for my student (see Sped Teacher Social Validity Survey, Appendix M).

Similar survey questions were asked of the paraprofessional (see Paraprofessional Social Validity Survey, Appendix N). Included in each social validity survey were 5-6 open ended prompts. These questions asked the following: (1) how (if at all) was the job-embedded training curriculum on social facilitation helpful for you as a paraprofessional, (2) what barriers or roadblocks (if any) to supporting social interactions between students with disabilities and their peers without disabilities did you encounter after you received the training with your special education teacher, (3) how (if at all) did this training impact your collaboration with the special education teacher, (4) how (if at all) did this training impact your collaboration with the general education teacher, and (5) what changes (if any) to the training package would you recommend? These ratings and open-ended questions provided an insight into how the teachers and

paraprofessionals were perceived and responded to the training and curriculum beyond just implementation of strategies.

CHAPTER 3

RESULTS

The results of the training intervention on the rates of social facilitation by the participating paraprofessionals and the rates social interactions of the focal students are presented in this chapter. Both the paraprofessional facilitation rates and the student interaction rates have been analyzed through visual inspection of trend and level, mean differences across baseline and treatment, and percentage of non-overlapping data points.

Treatment Integrity

Treatment integrity of the special education teacher training was monitored by review of the audio recordings of the teacher trainings using the treatment integrity checklist by the researcher and a research assistant. Each recording was reviewed for inclusion of each step of the treatment integrity checklist. Both the researcher and the research assistant marked each step of the training as being completed across all training sessions. Agreement was 100% for each teacher training session.

Teacher Procedural Fidelity

Teacher procedural fidelity was monitored by tracking implementation of the steps of the intervention and the implementation of the training of paraprofessionals. Intervention procedural fidelity was collected by using the study training checklist (see initial paraprofessional training session). All teachers marked all steps of the study training checklist as being completed with the exception of teacher number 2, Diana, who did not mark step number two as complete (step number 2 was to notify the researcher of the date/time/location of the paraprofessional training). Procedural fidelity of the training was measured by the researcher and the research assistant by reviewing the available audio recordings of the paraprofessional trainings using the treatment

integrity checklist (see Treatment Integrity Checklist in Appendix H). Triad numbers 1, 3, 4, & 6 all completed each step of the training curriculum in their initial training of the paraprofessional. Both the researcher and the research assistant marked 100% of the steps as completed on the treatment integrity checklists.

Paraprofessional Facilitative Behavior

Figure 1 presents the facilitative behaviors of three participating paraprofessionals across the duration of the study (Pair #1, Pair #3, Pair #4). Figure 2 presents the facilitative behaviors of the three remaining participating paraprofessionals across the duration of the study (Pair #6, Pair #1, Pair #5). Frequency counts of social facilitative behaviors were collected during 10-minute observation probes, and calculated into rate per minute. This data only depicts social facilitative behaviors that resulted in social interactions between the focal student and their general education peers (social facilitation between the focal student and peer tutors or between peers from the self-contained setting are not included.)

Figure 1.

Pair 2, Pair 3, Pair 4 Data Charts

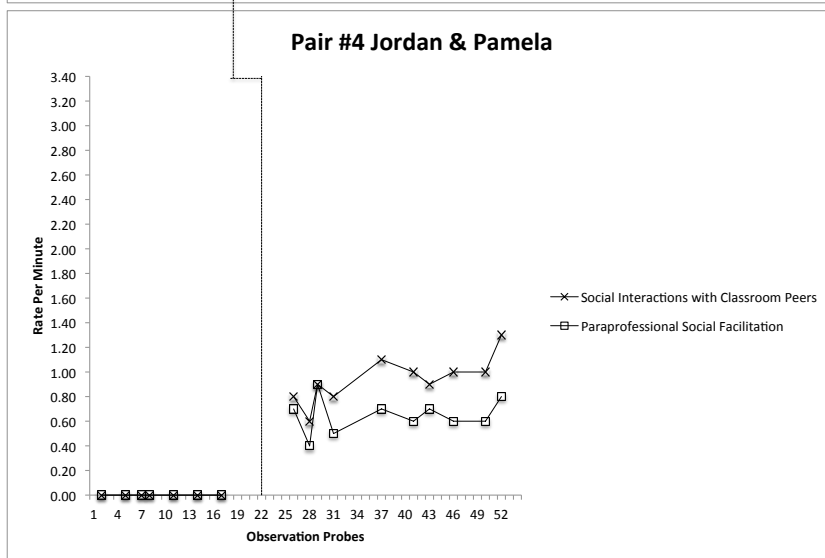
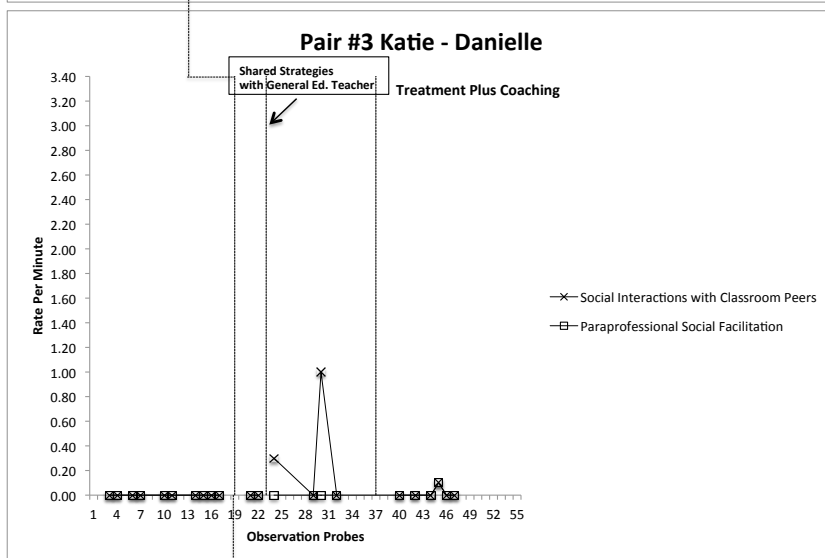
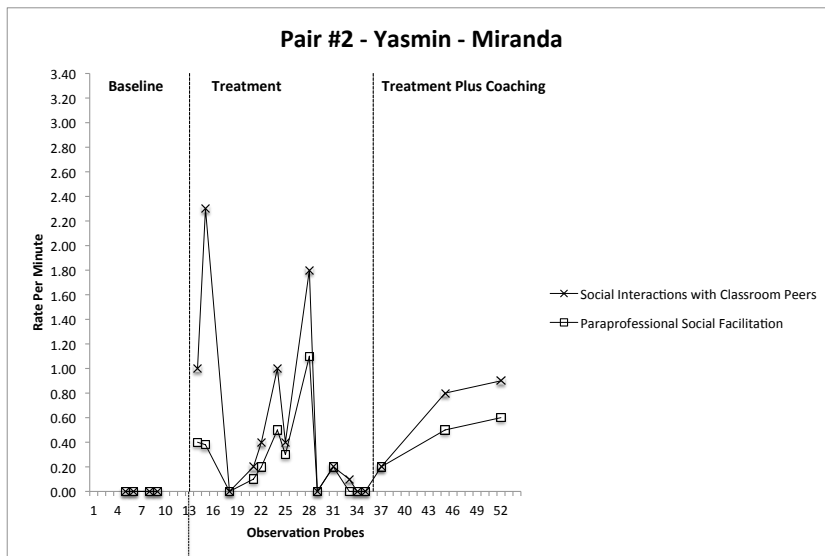
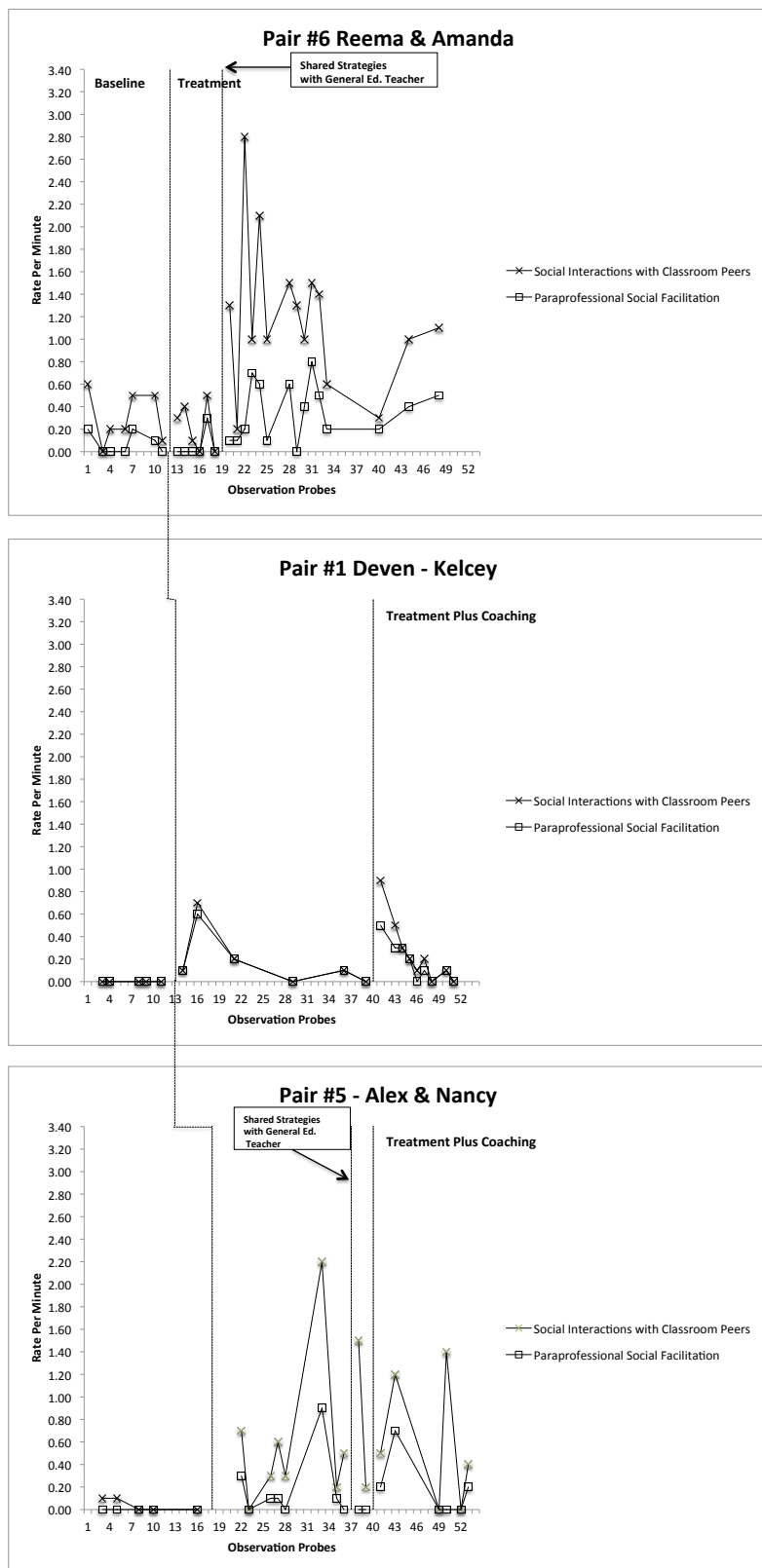


Figure 2.

Pair 6, Pair 1, Pair 5 Data Charts



The results represented in Figures 1 and 2 show that the rate of social facilitative behaviors increased immediately after treatment for Kelcey (pair #1), Miranda (pair #2), Pamela (pair #4) and Nancy (pair #5). Amanda (pair #6) failed to show an immediate increase in social facilitation, but by the fifth observation post training, her rate of social facilitation increased to above baseline levels. Danielle (pair #3) did not show any response to training in terms of facilitating social interactions with peers from the general education classroom. Rates of social facilitation varied by participant. During baseline, only one paraprofessional engaged in any social facilitative behaviors (Amanda – Pair #6). None of the other paraprofessionals engaged in any social facilitation between the focal learner and peers from their general education classes during baseline. Amanda's rates of social facilitation averaged 0.071 per minute during baseline (low of 0.0 to a high of 0.2). Of the seven baseline observation probes, there were three in which social facilitation was observed (rates of 0.2, 0.2, and 0.1). Across a 10-minute observation probe, 0.2 per minute represents a total frequency of 2 social facilitation moves.

In examining level change and trend through visual analysis, only Pamela (pair #4) saw a significant and steady change in social facilitation after intervention. There was a clear change in level between baseline and treatment, and this level was maintained across treatment observations (trend was steady). For Kelcey, Miranda, and Nancy (Pairs #1, 2, & 5) there was an initial change in level after training, but some bounce in the data during treatment, with downward trends. These paraprofessional's initially engaged in the social facilitation behaviors but began to do so with less frequency and reached or approached a return to baseline levels. In these cases special education teachers were asked to engage in practice based coaching.

Coaching is noted in figure one in the portion of the phase of the graph labeled “treatment plus coaching”.

Mean differences in social facilitation across phases of the study and percentage of non-overlapping data points are summarized in table 9.

Table 9.

Paraprofessional Social Facilitation Means Across Phases

	Mean Rate Social Facilitation in Baseline	Mean Rate Social Facilitation in Treatment	Percentage of Non-Overlapping Data Points (PND)	Mean Rate Baseline Generalization	Mean Rate Treatment Generalization
#1 Deven – Kelcey	0	0.156	62.5%	N/A	N/A
#2 Yasmin – Miranda	0	0.28	68.75%	0	0.2
#3 Katie – Danielle	0	0.008	10%	N/A	N/A
#4 Jordan – Pamela	0	0.65	100%	0	0.7
#5 Alex – Nancy	0	0.163	50%	0	0.4
#6 Reema - Amanda	0.071	0.271	42.85%	0.05	0.33

While there was a change in social facilitation after treatment for all of the paraprofessionals, each paraprofessional returned to baseline levels of social facilitation during at least one observation probe after training (with the exception of Pamela). Percentage of non-overlapping data points PND that represent strong intervention effects were found for Pamela (pair #4). PND scores that represent questionable intervention effects were found for Kelcey (62.5%), Miranda (68.75%), and Alex (50%) (pairs #'s 1, 2, &5). PND scores representing ineffective intervention effects were found for Danielle (10%) and Amanda (42.85%) (pairs #'s 3, & 6).

Trend line analysis shows decelerating trends in the treatment condition for three of the six participants (Kelcey #1, Miranda #2, & Nancy #5). Trend line is flat for two participants (Danielle #3 and Pamela #4) Amanda's (pair #6) social facilitation trend line is accelerating in a therapeutic direction.

Observational probes in a generalization setting were conducted in four of the six study sites (see Figures 4, 6, 7, 8). Generalization settings were different classroom settings (with the exception of Reema, as her generalization setting was a different activity in the same kindergarten classroom) in which the student was participating with general education peers and being supported by the same paraprofessional as the training classroom (but planning for social facilitation was not targeted in these classrooms and the social facilitation strategies developed by the paraprofessional with the special education teacher in the training were not shared with the general education teacher in the generalization settings). Data for these probes is represented in Figure 1, and analyzed by mean in table 9. All four of the paraprofessionals increased the rate of social facilitation in the generalization setting after training. Miranda (#2), Pamela (#4), and Nancy (#5) engaged in zero social facilitation strategies in the generalization setting during baseline. After training, all three increased their use of social facilitation strategies in subsequent generalization observation probes. Miranda increased to a mean rate of 0.2 social facilitation strategies per minute after training. Pamela increased her mean rate of social facilitation strategies to 0.7 per minute in the generalization classroom. Nancy increased to a mean rate of 0.4 social facilitation strategies per minute in the generalization classroom. Amanda engaged in a mean rate of 0.05 social facilitation strategies per minute during baseline in the generalization activity, and increased to a mean rate of 0.33 per minute after training.

Student Social Interactions

Figures 1 and 2 present the social interactions with peers without disabilities in the general education classroom for each participating student across the duration of the study. Frequency counts of social interactions were collected during 10-minute observation probes, and calculated into rate per minute. This data only depicts social interactions between the focal student and their general education peers (social interactions between the focal student and peer tutors or between peers from the self-contained setting are not included.)

The results shown in Figures 1 & 2 show that the rates of social interactions for Deven (pair #1, Yasmin (pair #2), Jordan (pair #4), and Alex (pair #5) increased post-intervention. Immediately after training Katie (pair #3) and Reema (pair #6) had rates of social interactions at baseline levels. In both of these cases, there was a delay between initial training and the paraprofessional sharing social facilitation strategies with the general education teacher in the target setting. Once strategies were shared with general education teacher, rates of social interaction with general education peers reached above baseline levels for both Katie and Reema.

Overall rates of social interactions varied by participant. During baseline, four students had rates of zero social interactions with general education classmates during all of the 10-minute observation probes (Deven #1, Yasmin #2, Katie #3, and Jordan #4). Alex and Reema both had some interactions with general education classmates during the baseline phase of the study (Alex had a mean rate of social interactions of .004 per minute, and Reema a mean rate of 0.3 per minute during baseline).

In examining level change and trend through visual analysis there was a change in level for all of the student's rates of social interactions. The trend lines reveal some students' rates of social interactions were decelerating (Yasmin #2, Katie #3), and one student's trend line was flat

(Alex #5). Deven's (#1) rate of social interactions trend line is accelerating very slightly, and Jordan's (#4) and Reema's (#6) rates of social interactions are trending upwards.

Mean differences in rates of social interactions across phases of the study and percentage of non-overlapping data points are summarized in table 10.

Table 10.

Student Social Interaction Means Across Phases

	Mean Rate Social Interaction in Baseline	Mean Rate Social Interaction in Treatment	Percentage of Non-Overlapping Data Points	Mean Rate Baseline Generalization	Mean Rate Treatment Generalization
#1 Deven – Kelcey	0	0.213	68.75%	N/A	N/A
#2 Yasmin – Miranda	0	0.581	75%	0	0.3
#3 Katie – Danielle	0	0.117	30%	N/A	N/A
#4 Jordan – Pamela	0	0.94	100%	0	0.8
#5 Alex – Nancy	0.004	0.625	81.25%	0.1	0.8
#6 Reema - Amanda	0.3	0.924	57.14%	0.35	1.9

Percentage of non-overlapping data points PND that represent strong intervention effects were found for Jordan (100%) (pair #4). PND scores that represent effective intervention effects were found for Yasmin (75%), and Alex (81.25%) (pair's #'s 2, & 5). PND scores representing questionable intervention effects were found for Deven (68.75%) and Reema (57.14%) (pair's #'s 1, & 6). PND scores representing ineffective effects were found for Katie (30%) (pair #3).

Observational probes in a generalization setting were conducted in four of the six study sites. Data for these probes is represented in Figure 2, and analyzed by mean in table 10. All four of the students experienced increased rates of social interactions in the generalization setting

after training. Yasmin and Jordan (#2 & #4) both experienced zero social interactions during the baseline generalization probes. After treatment they experienced mean rates of social interactions of 0.3 (Yasmin #2) and 0.8 (Jordan #4) respectively in their generalization classroom settings. Alex (#5) and Reema (#6) both had some social interactions in the generalization settings during baseline (mean rates of 0.1 per minute, and 0.35 per minute respectively). After training, Alex experienced a mean rate of social interactions of 0.8 per minute in the generalization setting, and Reema experienced a mean rate of social interactions of 1.9 per minute in the generalization setting.

Figures 3-8 illustrate the combination of the two dependent variables in the study for each student and paraprofessional pair. In figures 3-8 each pair is represented on one graph. Each of these graphs demonstrates the relationship between the rates of social facilitation by the paraprofessional and the subsequent rate of social interactions for the student. The charts together reveal how smaller rates of social facilitation can lead to increased rates of social interaction for the student with a disability. In some cases it is clear that the focal student only experienced social interactions with peers when the interaction was facilitated by an adult and in other cases the spread of the two lines indicates that the student and their peers engaged in more social interactions with less facilitation required from the paraprofessional over time in the study.

Figure 3.

Rates of interaction and social facilitation for Pair #1

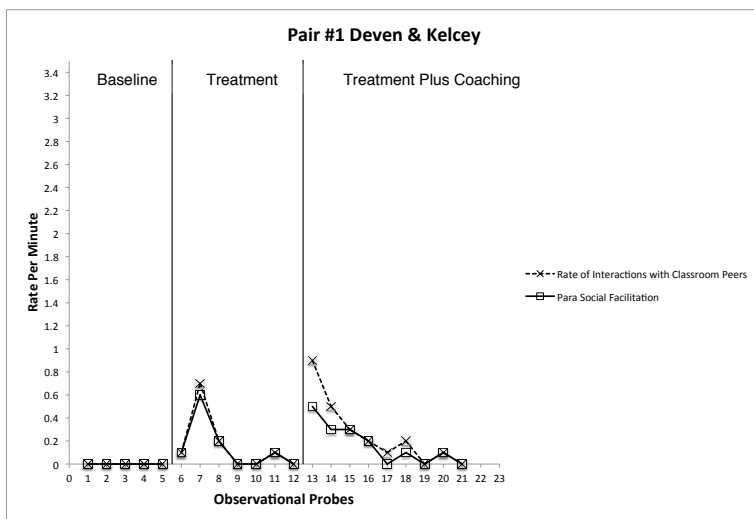


Figure 4.

Rates of interaction and social facilitation for Pair #2

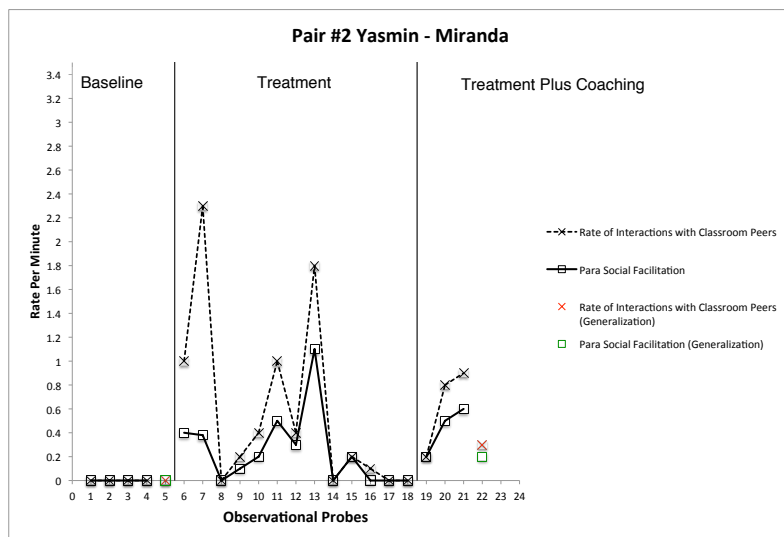


Figure 5.

Rates of interaction and social facilitation for Pair #3

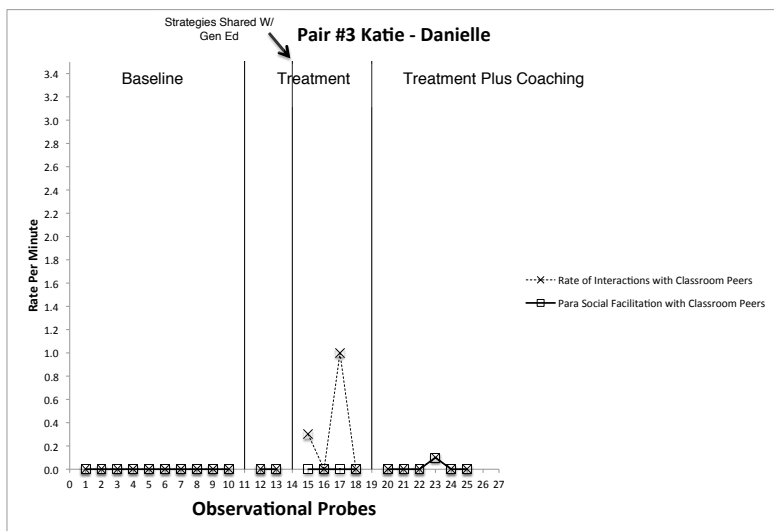


Figure 6.

Rates of interaction and social facilitation for Pair #4

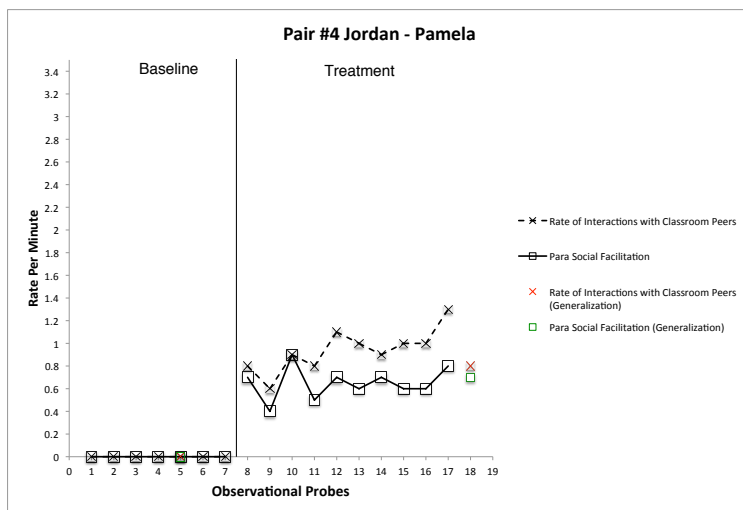


Figure 7.

Rates of interaction and social facilitation for Pair #5

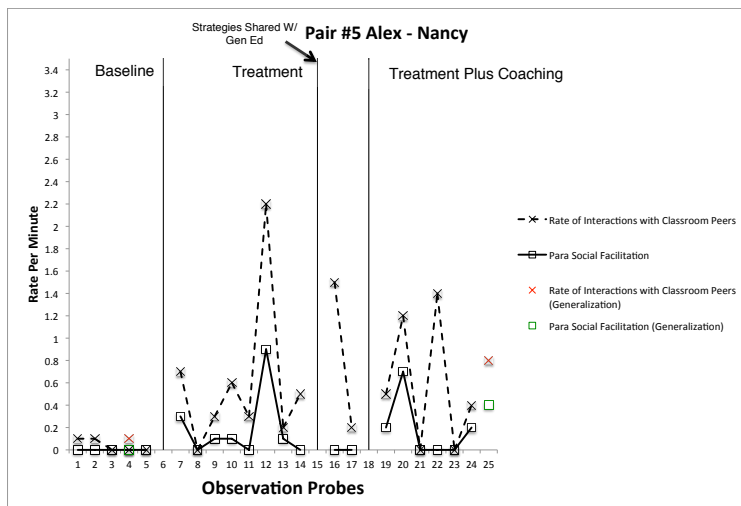
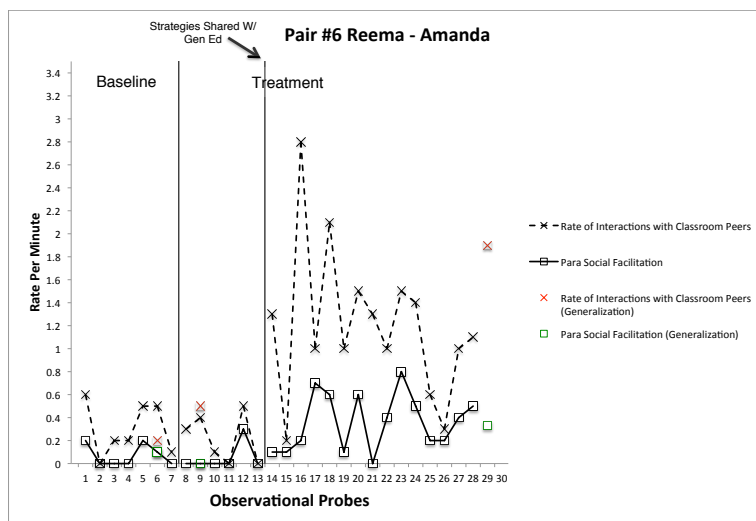


Figure 8.

Rates of interaction and social facilitation for Pair #6



Special Education Teacher Training Follow Up Activities

Special education teachers were asked to track any subsequent training activities they provided their paraprofessional after the initial training was conducted. These practices have

been organized loosely by connection to a training practice found in the coaching or professional development literature (actions that prime the procedures, actions that support accountability for the skill in practice, actions that are components of practice based coaching). The follow up training activities completed prior to requests for practice based coaching by the researcher are summarized in table 11. Table 12 summarizes the follow up activities completed by special education teachers after the researcher requested that practice based coaching be initiated by the teacher (special education teachers in triads' 1, 2, 3, & 5 were asked to engage in practice based coaching when the data indicated that social facilitation had returned to baseline levels or below).

Table 11.

Follow Up Training Activities (not prompted by request of researcher) by Special Education Teachers

Follow Up Training Support	#1 Deric	#2 Diana	#3 Travis	#4 Sara	#5 Emma	#6 Jennifer
Discussed social facilitation strategies prior to going into the general education classroom (priming)	No	Yes*	Yes*	Yes*	Yes	Yes*
Observed the paraprofessional during time in the general education setting without providing feedback (accountability)	Yes	Yes	No	No	No	Yes
Observed the paraprofessional in the general education setting and provided performance feedback with notes / data to support (PBC)	No	No	No	No	No	Yes
Provided shoulder to shoulder coaching on social facilitation strategies in general education (PBC)	No	No	No	No	No	No
Provided modeling of specific social facilitation strategies in the special education setting (PBC)	No	Yes	No	Yes*	Yes	Yes*
Provided modeling of the social facilitation strategies in the general education setting (PBC)	No	No	No	No	No	Yes
Debriefed and problem solved implementation of social facilitation strategies later in the day with paraprofessional (PBC)	No	Yes	Yes	Yes*	No	Yes*

*Denotes a follow up practice that teachers completed on multiple occasions

Table 12.

Follow Up Training Activities (after Practice Based Coaching request of researcher) by Special Education Teachers

Follow Up Training Support	#1 Deric	#2 Diana	#3 Travis	#5 Emma
Discussed social facilitation strategies prior to going into the general education classroom (priming)	Yes*	Yes	No	Yes
Observed the paraprofessional during time in the general education setting without providing feedback (accountability)	No	No	No	No
Observed the paraprofessional in the general education setting and provided performance feedback with notes / data to support (PBC)	No	No	Yes	Yes
Provided shoulder to shoulder coaching on social facilitation strategies in general education (PBC)	Yes	No	Yes	Yes
Provided modeling of specific social facilitation strategies in the special education setting (PBC)	No	No	Yes	Yes
Provided modeling of the social facilitation strategies in the general education setting (PBC)	Yes	No	Yes	No
Debriefed and problem solved implementation of social facilitation strategies later in the day with paraprofessional (PBC)	Yes	Yes	Yes	Yes

Follow up practices that were consistent across all special education teachers included discussing the social facilitation strategies with their paraprofessional prior to their time in the general education classroom, and debriefing and problem solving with the paraprofessional after their time in the general education classroom. All but one special education teacher (Deric – triad #1) modeled the specific social facilitation strategies for the paraprofessional in the special education setting (Kelcey did not work with Deven within the special education setting at any point during the study).

Deric (triad #1) noted in his tracking form, that he engaged in discussions of the social facilitation strategies with his paraprofessional on multiple occasions. He also noted that he

observed the paraprofessional in the general education classroom and engaged in several practice based coaching procedures (modeling, in the moment shoulder to shoulder coaching, and debriefing with performance feedback data). Prior to the request for practice based coaching by the researcher, Deric had completed observation in the general education setting with and without performance feedback. After the researcher's request for practice based coaching, Deric responded by discussing with social facilitation with the paraprofessional prior to her time in general education on two occasions, with modeling of the social facilitation strategies in the general education setting, and with debriefing the strategies after their time in general education.

Diana (triad #2) engaged in debriefing practices and discussed the strategies prior to the paraprofessional going to the general education setting. When asked to engaged in coaching with the paraprofessional, Diana discussed social facilitation prior to their time in general education on one occasion. She did not engage in any observation in the general education setting with the intention of providing specific feedback on social facilitation.

Travis (triad #3) noted that he engaged in all of the follow up coaching practices with the exception of observing the practices in general education without providing feedback. Travis engaged in observation and coaching activities in the general education setting after being asked to complete practice based coaching strategies by the researcher (prior to initiating the practice based coaching activities at the request of the researcher, Travis had discussed the strategies with paraprofessional prior to their time in general education on two separate occasions and debriefed and problem solved with them after their time in general education on one occasion.

Sara (triad #4) provided support outside of the general education classroom in the form of discussing the strategies before and after the paraprofessional used them in the general education setting. She also engaged in specific modeling of the social facilitation practices outside of the

general education setting. The researcher did not request that Sara initiate or engage in practice based coaching during the treatment phase of the study.

Emma (triad #5) engaged in all of the follow up practices with the exception of observing in general education without providing feedback and modeling the strategies in the general education setting. Emma engaged in observation in general education, with shoulder-to-shoulder coaching and performance feedback practices after the request from the researcher to initiate practice based coaching. Prior to this request, Emma had discussed social facilitation strategies with the paraprofessional prior to their time in the general education setting, modeled social facilitation in the special education setting and debriefed after time in the general education setting.

Jennifer (triad #6) noted the highest frequency of follow up practices of all of the special education teachers. She discussed the strategies with the paraprofessional prior to their time in the general education setting on three noted occasions. She provided specific modeling of social facilitation strategies in the special education setting on five noted dates. She debriefed and problem solved with the paraprofessional around the social facilitation strategies on four different dates. The researcher did not request that Jennifer initiate or engage in practice based coaching during the treatment phase of the study.

Social Validity

Both special education teachers and paraprofessionals were given social validity surveys (with a likert based agreement scale) and open-ended questions seeking information about how acceptable, feasible, and helpful the training practices and curriculum were from their perspectives. All of the participating special educators and paraprofessionals completed and returned these surveys to the researcher. The responses of participants were analyzed by

calculating mean response ratings to each prompt. Respondents were asked to rate each prompt in the survey on a scale of 1-6 (from 1 ‘strongly disagree’ to 6 ‘strongly agree’). The results of this analysis are summarized in tables 12 and 13.

Table 13.

Paraprofessionals’ Social Validity Survey Responses

Social Validity Survey Question	Mean Response Rating	Lowest Rated Response	Highest Rated Response
1. I engaged in more social facilitation to support interactions between students with disabilities and their non-disabled peers as a result of this training package	5.67	5 (moderately agree)	6
2. This training was consistent with common sense and good practice in helping staff to work effectively	5.67	5 (moderately agree)	6
3. I would recommend that other special education teachers use this training package with the paraprofessional staff that they work with	6	6 (strongly agree)	6
4. This training package was effective in helping me recognize the importance of social interactions for students with disabilities	5.67	5 (moderately agree)	6
5. This training package was effective in helping me implement social facilitation strategies	5.17	5 (moderately agree)	6
6. I like the procedures included in this training package	5.17	5 (moderately agree)	6
7. This training package helped me to be a more effective paraprofessional	5.67	5 (moderately agree)	6
8. This training package helped my special education teacher to be a more effective trainer to paraprofessionals	5	4 (slightly agree)	6
9. This training package resulted in more communication between myself and the general education teacher in the target setting	5	3 (slightly disagree)	6
10. This training package resulted in improved social experiences for my student	5.33	4 (slightly agree)	6

Table 14.

Special Education Teacher Social Validity Survey Responses

Social Validity Survey Question	Mean Rating	Low	High
1. This training package would be appropriate for working with a variety of paraprofessional staff	5.83	5 (moderately agree)	6
2. This training was beneficial for me to conduct with the paraprofessional included in the study	5.83	5 (moderately agree)	6
3. I would use this training to train other paraprofessionals on social facilitation	6	6 (strongly agree)	6
4. This training was consistent with common sense and good practice	5.83	5	6

in helping staff to work effectively		(moderately agree)	
5. I would recommend this training package to other special education teachers	5.67	5 (moderately agree)	6
6. This training package was effective in training my paraprofessional to implement the targeted skills	5.33	4 (slightly agree)	6
7. I was able to implement the training procedure in a timely manner	5.5	3 (slightly disagree)	6
8. This training package fits in well with my existing paraprofessional teaming (supervision and training) procedures	5.5	3 (slightly disagree)	6
9. I can effectively use this training package to train paras with little to no changes to my program and teaming structure (e.g., team meetings, daily debriefing practices, etc.)	5.67	4 (slightly agree)	6
10. I like the procedures included in the training package	5.67	4 (slightly agree)	6

Both sets of participants rated the training package highly. Most responses to the prompts were rated as strongly agree (6) or moderately agree (5).

One teacher responded that they slightly disagree (3) with being able to implement the training procedure in a timely manner, and that they can effectively use this training package to train paraprofessionals with little to no changes to their program and teaming structure. It should be noted that this same respondent went on to explain the lower ratings in her response to the open-ended question asking “what roadblock or barrier (if any) did you experience in effectively using the training with your paraprofessional?” Her response stated, “the roadblock I encountered was time. I did not spend enough time as I should have connecting with the para-educator and with the general education teacher about the materials and how the program was going. The para in the program is not able to participate in our weekly morning para-educator meetings that we do every Friday morning and this makes it particularly challenging to connect with her.”

Responses to the open-ended questions provided additional insight into the perspectives and experiences of the participating teachers and paraprofessionals. One paraprofessional added

a comment to her social validity survey stating, “since being trained and implementing it in the general education classroom, I have seen the student interact with peers more on her own. It’s been great!” Teacher responses to the open ended questions can be found in table 14.

Paraprofessional responses are collected together in table 15.

Table 15.

Teacher’s Responses to Open Ended Questions

Open Ended Question	Deric’s Responses	Diana’s Responses	Travis's Responses	Sara's Responses	Emma's Responses	Jennifer's Responses
How (if at all) was the job-embedded training curriculum on social facilitation helpful for you as a special education teacher in supporting your paraprofessional training practices?	"It was helpful because it gave me tools and resources to focus the attention on increasing social interactions for all involved"	I like to have the structure provided by the curriculum. I felt that all understood the important of social skill strengths for our students about the focus student and her community around her."	The discussion points during training	I liked how the materials had talking points that I could use to facilitate the training. The topics allowed for Pamela and I to have open and honest conversations about Jordan and her community around her	I found the curriculum materials very helpful and plan on using them in the fall to train all my para-educators. The personal reflection information in the training manual was a very helpful tool for me to use! The personal reflection aspect of this curriculum was not a piece of training I had spent much time focusing on and having [a] prompt targeting it was helpful for me. In the same way, I found the follow up materials helpful because this is another aspect of para training that I need to dedicate more time to. Having para-educator handouts and worksheets was another aspect of the curriculum that I liked because my paras all like having papers they can take away and reference later. Handout 8 from unit 7, I found especially helpful!	It was helpful to have a pre-made resource to turn to versus having to create it on my own. I could easily pull the training materials and use them without too much prep, which is crucial!
What roadblocks or barriers (if any) did you experience in effectively using the training with your paraprofessional ?	I did not experience any roadblocks. I found it a great experience.	I was unable to observe my para interact with the student on a regular basis.	Working with general education teacher. Including peers from PE class (para was not sure how to approach peers)	I did not experience any roadblocks. I found the training straightforward and easy to follow through.	The roadblock that I encountered was time. I did not spend as much time as I should have connecting with the paraeducator and with the general education teacher about the materials and how the program was going. The para in the program is not able to participate in our weekly morning paraeducator meetings that we do every Friday morning and this makes it particularly challenging to connect with her. I have spoken with my principal about this and her and I are working on a calendar/schedule that will allow for more frequent paraeducator meetings. As a special education teacher I know that I need to dedicate more time to para training. At the start of the school year especially I need to be observing in the general education class to help paras and general education teachers facilitate social interactions and include students from my class. Aside from my own roadblocks of not dedicating the time to this program I didn't find any other roadblocks.	Just finding the time to chat before school and after she was in general education to debrief. Sometimes we had to wait until several hours after her time in general education because there just wasn't enough time to properly debrief.
What impact (if any) did you see as a result of using the training package with your paraprofessional ?	I saw the student have more meaningful interactions and I saw the paraprofessional also try to increase independence and interaction among students	She really focused on practicing the skills taught. She referred back to the training sheets.	Increased participation with the class as opposed to engaging in separate individual activities.	The student interacted with her peers much more. She used her communication device to interact with peers. We programmed her device to	I saw a change with the 5th grade teacher while this study was being completed and after the study. She checked in with me much more about my 5th grade student and his participation in her class. I think that the study helped remind her of the importance of inclusion and social skills instruction. I did not see a change with the paraeducator. I think that part of this was due to	None

			have comments and questions to facilitate her communication.	my lack of supervision and reviewing the materials with her. Other paraeducators in my room would have picked up on these skills more quickly and could generalize the techniques to different situations. With this particular para I have found that she has a difficult time generalizing what she has learned from the specific example she is give to other situations during her day.
What changes (if any) to the training package would you recommend? Please explain why...	None, I though it was great because it was clean and direct.	I'd like more follow up activities.	None that I can think of.	I do not think the training package materials need to be changed. However, my recommendation would be that there is more accountability/structure in follow up aspect of the training. As a teacher, I think that I would have done a better job is I knew I needed to schedule two different post training check ins and two observations. I knew what I needed to do but with all the other things on my to do list, I needed to schedule specific check in times to keep myself accountable.
Please make any other comments you would like to offer			Thanks for sharing this training manual with me!	A big component of the success of this program relies on the special education teacher's management skills with her paraeducators. Is there time set aside for meetings? Does the teacher do observations on a routine basis? Managing paras is a weak point in my teaching skills. I would guess that a teacher with more experience managing paraeducators would be more successful with this program.

Table 16.

Paraprofessional Responses to Open Ended Questions

Open Ended Questions	Kelcey's Responses	Miranda's Responses	Danielle's Responses	Pamela's Responses	Nancy's Responses	Amanda's Responses
How (if at all) was the job-embedded training curriculum on social facilitation helpful for you as a paraprofessional?	It was challenging at first, I didn't realize how much the student and I could ignore each other. Whilst sitting right next to each other. It gave me more confidence and motivation to facilitate more interactions.	Helping peers understand interactions / communication of student and how to interpret.	It was helpful for me by opening up my perspective on how to direct interact with my students	It brought it to my attention that I need to make more of an effort to help non-verbal students feel more included	Yes, helpful in implementing strategies to help with communication between disabled student and non-disabled	The training helped me see the opportunities to encourage social interaction that I was previously missing. It gave me multiple strategies to help my student have meaningful relationship building interactions with her peers.
What barriers or roadblocks (if any) to supporting social interactions between	A more structured class has less opportunities for facilitation then a less structured class	Taking time to develop trust in other peers to feel more comfortable in doing tasks together	The general ed teacher would not have anything prepared for our students. Did something different every	Getting over my shyness to approach students. Also, some students were reluctant to participate	None, coming up with strategies for each of our disabled students, as they are each unique so you have to set goals	Occasional precipitating factors (lack of sleep, previous disturbances before school, etc.) would

students with disabilities and their peers without disabilities did you encounter after you received the training with your special education teacher?			day and did not help with making out kids a part of the class		that will be helpful for improvement	negatively affect the student, her interactions and my ability to support her. Peers also would more on too quickly occasionally, not allowing for proper processing time for students.
How (if at all) did this training package impact your collaboration with the special education teacher?	It increased communication about seeking opportunities to facilitate more social interactions for the student	Helped to identify what was working / what wasn't	Didn't impact at all negatively. Positively - able to communicate with him better	We have always worked closely, so not much	Impacted by way of better communication to come up with enhanced strategies to help disabled students to be more successful	It helped me be more aware of the importance of social interactions - the importance of communicating how the student was / was not interacting with her peers.
How (if at all) did this training impact your collaboration with the general education teacher?	It increased collaboration to seek and facilitate more interactions by the general ed teacher and myself	Had a better understanding to explain to general education teacher why we were changing routine (e.g., changing tables and seats)	Made me frustrated	I talked more and had [focal student] interact more than in the past	Better communication between us as far as strategies to help social skills between our students.	We were able to discuss strategies to help the student have better interactions or just interact. It helped gen ed teacher with general education students to help them interact with the student.
What changes (if any) to the training package would you recommend? Please explain why...		Observe student before program to identify areas of help, and list possible situations/solutions to be prepared for them and refer to them.	I would have liked to have demos of each social facilitation / Supervisor to student in person	None	None, being open to try any training to help the disabled be more successful with their peers and improve knowledge in the classroom	None

CHAPTER 4

DISCUSSION

The current study expanded on the growing need for paraprofessional training practices that can be implemented by special education teachers responsible for the training and supervision of paraprofessionals to provide effective social supports in inclusive settings for students with low-incidence disabilities. This study investigated whether teacher-delivered professional development would enable paraprofessionals to facilitate social interactions between students with disabilities and their classroom peers in a general education setting, and whether the social facilitation would result in increased social interactions for students with disabilities. The results suggest that when given a brief training, and a professionally developed curriculum covering specific social facilitation strategies including awareness building on the importance of social support for students with disabilities, special education teachers can provide the training on social facilitation to their paraprofessionals in a short amount of time in a manner that generally fits within their existing program structures.

The impact of this training resulted in an inconsistent increase in the frequency of social facilitation strategies used by four of the six participating paraprofessionals. One paraprofessional (Pamela – triad #5) showed a significant and consistent increase in her social facilitation after initial training. Another paraprofessional (Danielle - triad #3), failed to show a demonstrable increase in social facilitation strategies until given practice based coaching and even then, only engaged in one social facilitation strategy across the duration of the study. Travis, the special education teacher in this case engaged in what could generally be considered more intensive coaching practices including observation with feedback, modeling and shoulder to shoulder coaching of the strategies within the general education setting.

Three of the paraprofessionals showed some initial engagement in social facilitation after training, but drifted back to at or below baseline levels of facilitation (Kelcey – triad #1, Miranda – triad #2, and Nancy – triad #5). When given researcher initiated but special education teacher delivered practice based coaching, all three showed responsiveness and increased social facilitation after the coaching. However, two participants showed a decreasing trend of social facilitation behaviors after the coaching was delivered (Kelcey, and Nancy). One paraprofessional (Miranda) had an increasing trend line of social facilitation after only very basic levels of practice based coaching were delivered (this coaching consisted of a discussion of social facilitation strategies with the paraprofessional before her time in general education, and a debriefing session after the paraprofessional supported the focal student in general education).

Given that the special education teachers completed the training in about one hour (average time of 62 minutes), and the relative ease which special education teachers were able to implement the initial paraprofessional training and follow up support, the results of this study are promising. The level of training time in the current study represents a significantly shorter training than what was used in previously published research in which the researcher directly trained the paraprofessional in the social facilitation skills using the same published paraprofessional training curriculum. In previous work, the direct training with paraprofessionals was reported to have taken 3 hours (Malmgren, Causton-Theoharis, & Trezek, 2005), or up to 4 hours (Causton-Theoharis & Malmgren, 2005). It is enlightening to compare the observed rates of social facilitation across these studies. After receiving an almost identical training package from a researcher, Malmgren, Causton-Theoharis, and Trezek (2005) found the mean rates of social facilitation for their participating paraprofessionals to be 0.34 per minute across 3 participating paraprofessionals (range of 0.07 per minute to 0.84 per minute). In another study,

Causton-Theoharis and Malmgren (2005) found the mean rates of social facilitation to be 0.195 per minute (range of 0.15 per minute to 0.29 per minute) across 4 participating paraprofessionals. In this current study, the mean rates of social facilitation found after training was 0.255 per minute (range of 0.01 to 0.65) across the 6 participating paraprofessionals. A full summary of the mean rates of social facilitation across the three studies can be found in table 17.

Table 17.

Mean Rates of Paraprofessional Social Facilitation After Training Across Studies

Participating Paraprofessional (from lowest rate to highest rate)	Current Study	Malmgren, Causton-Theoharis, & Trezek (2005)*	Causton-Theoharis & Malmgren (2005)
Paraprofessional 1	0.01	0.07	0.14
Paraprofessional 2	0.156	0.12	0.15
Paraprofessional 3	0.16	0.84	0.2
Paraprofessional 4	0.271	-----	0.29
Paraprofessional 5	0.28	-----	-----
Paraprofessional 6	0.65	-----	-----
Overall Mean	0.255	0.34	0.195

*Observation probes conducted in this study were 5-minutes in length

This comparison reveals that special education teachers were able to obtain training results at a comparable level to those obtained when researchers provided very similar, but more time intensive training. This is valuable information for the field, and can inform future paraprofessional training research.

When examining the results of the current study in terms of rates of social interactions there are other important findings. Knowing that the relationships students have with their peers has critical implications for their social and emotional development, the promotion of their success in school, and their overall quality of life (Gifford-Smith & Brownell, 2003; Rubin, Bukowski, & Laursen, 2009), the baseline rates of social interactions for the participating

students in this study should be alarming. Unfortunately, this study replicates the findings of other research that demonstrates that students with low-incidence disabilities are not likely to engage in meaningful rates of social interactions with peers in general education classrooms without intervention (Causton-Theoharis & Malmgren, 2005; Carter, Sisco, Brown, Brickham, & Al-Khabbaz, 2008; Carter, Sisco, Chung, & Stanton-Chapman, 2010; Webster & Carter, 2007). The rates of social interactions found at baseline for these six students are particularly disappointing, as all of the special education teachers reported that opportunities for social engagement and interactions with classroom peers were an important and desired outcome for their time in the general education setting. This suggests a potentially pervasive failure of the field to adequately support the social engagement of students with low-incidence disabilities with their general education classmates.

The rates of social interactions for all of the participating students were increased as a result of the paraprofessional training conducted in this study. The rates of interaction varied considerably by participant, and based on the analysis of PND, not all effects can be considered effective. This analysis has merit from an analytical perspective, but a case could be made to support a different interpretation. Moving up from rates of zero interactions with classroom peers to even a small number or highly variable rate of social interactions might represent a socially significant outcome for some students with low-incidence disabilities. During the course of the study, the researcher observed students interacting with classroom peers for the very first time across several participants. Each of these students were included in the targeted general education setting for the entire school year, and after training in the spring, there were multiple observed incidents of students meeting their classmates and exchanging names for the first time.

These events occurred in May between classmates that had been in the same class since September.

Social Significance of the Intervention

In some cases, rates of social interactions were impacted by structural changes in the general education classroom that were not directly observable social facilitation strategies. For instance several students were moved into closer proximity to their peers outside of the observation probes as a result of the conversations that the paraprofessionals had with the general education teachers in completing the follow up activity included in the training package. Yasmin (triad #2), Katie (triad #3), Alex (triad #5), and Reema (triad #6) all were moved into different seating or grouping arrangements in the targeted general education classroom after the conversations between paraprofessionals and the general education teachers. They had more access to their peers either by physically moving where they were located in the classroom to be included in table groupings with peers, or peers were shifted to be in closer proximity to the focal student.

During baseline observations, Alex was consistently seated at the back table with a peer from his self-contained classroom and the paraprofessional away from his general education classmates. After the training and sharing of strategies with the general education teacher, he and his peer from the self-contained classroom were regularly observed seated directly alongside general education peers. At first it was observed that a chair would be pulled up next to a row of desks or next to a grouping of desks. Later in the study, Alex was provided with a desk of his own placed in line with his general education classmates. Post-training, the general education teacher became directly involved in facilitating social interactions between Alex and his classmates. Facilitation by the general education teacher was observed and coded on seven

occasions. In addition to directly facilitating social interactions, the general education teacher made attempts to engage Alex in the general education activities that were occurring in the classroom. Prior to the sharing of strategies between the paraprofessional and the teacher, Alex was always completing alternative tasks at the back table that were provided by the special education teacher.

Alex's general education teacher was interviewed at the conclusion of the study to get her perspective on the training and the effect it had on her practice and the inclusion of Alex in her classroom. When asked about what impact did participating in the study have on Alex's social participation in the class, she responded:

“I think the biggest thing was being more conscious of his needs and trying to work with Nancy [paraprofessional] and Emma [special education teacher]. In terms of what the time in the classroom was supposed to do for him. And I think that wasn't always clear, and it became less clear as the year went on. The needs of the kids are so different, and just realizing that what he really needed, was to be able to communicate and build relationships with people, was more important than just being in here...But what he needed was a chance to talk with kids who were in a gen. ed. classroom doing typically gen ed things. And that's what I kind of got from it. Because having ongoing conversations with [his peer from the self-contained classroom] all day long is very different than having conversations with [] or [] [general education classmates] or having to make eye contact or having to do things that he is not as comfortable with....Just sitting next to someone watching what they were doing and trying do that, made a big difference. Just getting him to come up and act out Greek and Latin roots

charades was something I wouldn't have thought he would have done that earlier.”

In Alex's case, even though the rates of social facilitation of the paraprofessional were variable after the initial training, and a declining trend was found after practice based coaching was provided, the above quotes and researcher observations of changed seating arrangements and activities represent a socially significant shift towards more meaningful relationships with classmates, and participation in the general education curriculum.

Similar experiences around improved social engagement and participation in general education experiences and curriculum were observed for Katie (triad #3) as well. The dependent variables analyzed to answer the research questions for this study, failed to show that Danielle (the paraprofessional) was able to pick up the social facilitation strategies on any meaningful level. However, after the paraprofessional and the general education teacher reviewed the selected social facilitation strategies targeted by Danielle, there were significant qualitative changes in the way in which Katie participated in her 6th grade fitness class. As a result of their conversation, the general education teacher encouraged Danielle to include Katie in the ongoing activities that the rest of the class were doing.

During baseline observations, Katie was observed engaging in sporting activities with her peer tutors, and classmates from the self-contained program with the support of Danielle and the other paraprofessionals to the side or apart from her general education classmates. These activities were frequently not related to the general education activities, and were facilitated or directed by the paraprofessionals (for example on the day class was participating in badminton, Katie and her group were passing and shooting a basketball away from the badminton nets). After Danielle shared her strategies with the general education teacher, a marked effort to

involve her in the general education fitness activities was evident. Field notes showed that she was using the same materials as her classmates, and in closer proximity to them across an increasing number of observations. While she was still supported heavily by a peer tutor in these activities, the proximity resulted in social interactions with general education peers in probes number 15, 17, and 24. Additionally, after the training, the paraprofessional began to bring Katie's speech generating device to the class, and made some efforts to have Katie use her device to communicate more effectively with the peer tutor. These changes support an improved level of access to the general education curriculum and set the stage for an increase in social interactions with peers.

For Reema (triad #6) and Yasmin (triad #2), their consistent access and proximity to classroom peers increased after the strategies were shared with the general education teacher. In these cases, the paraprofessionals made requests to the general education teacher to move their student's location within the classroom to have more access to peers. Both of these students were supported by one paraprofessional that was also providing support to one other peer with a low-incidence disability in the classroom setting. During baseline observations the two students with low-incidence disabilities were seated next to each other with close direct support from the paraprofessionals. While each of these students were grouped at tables with one or two general education peers, the arrangement of the two students with disabilities with close adult support, was a barrier to social engagement and interactions. Amanda (triad #6) and Miranda (triad #2) asked permission to change seating locations for the students with disabilities in the classroom. As a result of these requests, the peers from the self-contained classrooms were moved to new table groupings where they would be seated with more general education peers. The paraprofessional continued to provide support to both students, but did so while moving around

the classroom more and increasing their distance between themselves and the students with disabilities. This represents a potentially powerful shift in practice as it has been reported in the literature that the close proximity of an adult can serve as an unintended barrier to social interactions (Broer, Doyle, & Giangreco, 2005; Giangreco, Edelman, Luiselli, & MacFarland, 1997; Malmgren & Causton-Theoharis, 2006; Tews & Lupart, 2008).

Peer Tutors

Two students in this study were supported with peer support arrangements in the targeted general education class. Yasmin (triad #2) and Katie (triad #3) were involved in peer tutor programs in which they had been assigned the support of a peer without a disability that was enrolled in an elective peer tutor program arranged through the participating special education teacher. Both Yasmin and Katie had high levels of social interactions with these peer tutors across all phases of the study (Yasmin had mean rates of social interactions with her peer tutor at 1.42 per minute; Katie had mean rates of social interactions with her peer tutor at 2.2 per minute). Potentially, these levels of interactions with the peer tutors acted as an unintended barrier to the social facilitation strategies to support interactions with general education peers for the paraprofessionals as a result of procedural drift (Cooper, Heron, & Heward, 2007). Paraprofessionals may have found it easier to target social facilitation between the focal student and the peer tutor as these opportunities were less effort (more convenient for the paraprofessional) and more likely to result in successful and sustained social interactions. Paraprofessionals were initially trained to specifically target social facilitation strategies to support interactions between the focal student and general education peers from the classroom (the inclusion of this aspect of the training was confirmed by review of the audio recording of the training between Katie's special education teacher and paraprofessional. It was reiterated in the

audio recording on 4 separate occasions during the training; since no recording of the training conducted with Miranda was available to the researcher, this can not be confirmed in her case).

Miranda (the paraprofessional supporting Yasmin), initially increased her social facilitation directly after training, however, there was a significant drop off in social facilitation between general education peers and the focal student around probe #14 of the study. This trend continued at low levels of social facilitation until probe #18. Between probes 14 and 18, Miranda engaged in social facilitation strategies encouraging interactions between Yasmin and her peer tutor at a mean rate of 0.56 per minute. This mean rate is well above the mean rate of social facilitation strategies involving classroom peers that Miranda engaged in during the entire treatment condition (0.28 per minute). It is conceivable that Miranda was demonstrating procedural drift during this time of the study. She was engaging at high rates of social facilitation, but failing to apply the strategies to support the intended type of interactions.

Procedural drift may have played a role in the lack of observed social facilitation from Danielle with Katie (triad #3). During baseline observations, Danielle was observed engaging in social facilitation between Katie and her peer tutor(s) at a mean rate of 0.5 per minute. After training, this rate dropped to a mean of 0.1 per minute. While this is a decrease in social facilitation between Katie and her peer tutor overall, it does represent a significantly higher rate of social facilitation than that observed to support interactions between Katie and general education peers (the rate of 0.1 per minute represents a rate ten times higher than that found for facilitative behaviors with general education peers).

After receiving the training with the special education teacher, paraprofessionals were asked to provide a weekly self-rating of their implementation of the social facilitation strategies with the focus student. The ratings were on a four-point scale from “1 - none of the

opportunities” to “4 - all of the opportunities”. For the week including observation probes 14-18, Miranda rated herself as a score of 3 (“most of the opportunities”) for implementing the strategies. This may be evidence of procedural drift as it suggests she believed that she was still engaging in social facilitation at a moderately high rate. After the first week of self-ratings (in which she rated herself as a “2 – some of the opportunities”), Danielle rated herself as 3’s and 4’s across the remainder of the study. One might conclude that the paraprofessionals believed that social facilitation between the focus student and peer tutors was adequate in terms of performance.

When Danielle was asked at the conclusion of the study what impact (if any) did peer tutors have on the social experiences of the focus student, she responded that, “it may have been a problem. If I were to do this again, I may suggest that we don’t use a peer tutor for the study.” Miranda was asked the same question at the conclusion of the study and she responded that, “the peer tutor was super helpful and definitely increased the number of interactions [Yasmin] was experiencing.”

Teacher Follow Up Training Practices

One focus of this study was to examine the follow up training practices that special education teachers engage in when addressing a training target with their paraprofessionals. Little published research has examined this in the paraprofessional literature (Douglas, Chapin, & Nolan, 2015), and it represents a meaningful gap in our understanding of how special education teachers typically train their paraprofessionals. We know that special education teachers report spending only 7% of their school day directing or supervising the activities of their paraprofessionals. As many special education teachers can be supervising multiple paraprofessionals, research has suggested that this could mean about 2% of their day is spent

actively directing or supervising the work of each paraprofessional (Giangreco & Broer, 2005). Considering that much of this time is spent sharing daily expectations or directing work that doesn't necessarily require direct or ongoing training, this doesn't leave much time for the special education teacher to engaged in direct training and follow up on specific paraprofessional training targets.

In the social validity survey included in this study, the special education teachers strongly agreed with the following statements related to time and goodness of fit of the training procedures, "I was able to implement the training procedure in a timely manner" (mean rating of 5.5) and "This training package fits in well with my existing paraprofessional teaming (supervision and training) procedures" (mean rating of 5.5). This suggests that the training procedures outlined in this study generally fit in well with their existing time limitations for paraprofessional training. The one special education teacher that rated her responses as slightly disagree to these questions, still endorsed the training package overall and plans to use it with all of her paraprofessionals in the future, and provided some specific feedback about needing to find better ways to dedicate to training of her paraprofessionals (a self described weakness of her practice).

The data described in Table 12 in the results section, reveals what coaching or follow up practices special education teachers engaged in during the study (prior to being asked to engage in practice based coaching by the researcher, if the data on social facilitation strategies indicated the need for additional coaching or follow up). It should be noted that the initial teacher training performed by the researcher included a brief review of effective adult learning practices. During the review, teachers were encouraged to include observations, performance feedback, and debriefing procedures into their paraprofessional training activities as a part of this study.

The data on follow up training suggests that special education teachers tend to be reluctant to engage in specific practice based coaching practices without prompting. Most of the teachers discussed the social facilitation strategies with their paraprofessional prior to their time in general education (5 out of 6), and a majority engaged in debriefing about the social facilitation strategies with their paraprofessional after their time in general education (4 out of 6). The same number of teachers reported modeling the social facilitation strategies in the special education setting (4 out of 6).

Only one special education teacher self-initiated conducting an observation in the general education setting and using information from that observation to provide performance feedback to their paraprofessional (Jennifer – triad #6). In addition to the performance feedback, Jennifer also engaged in one session in the general education setting in which she specifically modeled social facilitation strategies for the paraprofessional. Between observation probes #16 and #17, Jennifer engaged in a combination of three teacher training practices including 1) discussing with the paraprofessional the social facilitation strategies prior to their time in the general education setting, 2) modeling specific social facilitation skills in the special education setting, and 3) debriefing with the paraprofessional after their time in general education (these all occurred prior to the self-initiation of Jennifer to engage in observation with feedback and direct modeling of social facilitation in the general education setting, these happened prior to observation probe #23). While a causal claim, can not be made in this case, these training procedures may be responsible for the change in level of social facilitation that occurred during observation probe #17. The targeted coaching practice conducted around the time of observation probes #22, and #23, may have influenced the jump in social facilitation behaviors that occurred around that time.

For the four teachers that were prompted by the researcher to engage in practice based coaching, only two engaged in observation in the general education classroom with feedback reviewed with the paraprofessional using notes and or data. Considering the potential benefit of coaching practices that incorporate performance feedback (Hall, Grundon, Pope, & Romero, 2010; Leblanc, Riccardia, & Luiselli, 2005), this suggests that some teachers may not be comfortable or proficient in using data or observation notes to provide specific performance feedback with their paraprofessionals.

Three of the four teachers (Deric – triad #1, Travis – triad #3, and Emma – triad #5) did engage in shoulder-to-shoulder coaching of the social facilitation strategies within the general education classroom. This level of training and support of paraprofessionals may be uncommon in the field (Douglas, Chapin, & Nolan, 2016). However, the impact of this type of training was mixed. The practice based coaching did result in a level change of performance for social facilitation in the case of Deric and Emma, but in both cases, social facilitation rates began to decline again after the coaching was implemented. For Travis (triad #3), the shoulder-to-shoulder coaching didn't appear to have a meaningful impact on the rates of social facilitation of Danielle (her one instance of social facilitation did occur after coaching, but no others were observed for the remainder of the study).

Limitations of the Study

Although the findings of the current study show great promise, certain limitations should be considered including experimental design, interobserver agreement checks, and treatment fidelity of teacher training activities and practice based coaching.

The limitations of a stacked concurrent A-B design should be considered when examining the results of this study. While replicating the intervention across six participating

teacher, paraprofessional, and student triads does strengthen the findings, not implementing the intervention only after initial effects of the training were observed in each setting does reduce the strength of the findings. The use of a multiple probe design and not a strict daily measure of observational probes is another limiting factor in terms of experimental design.

Although every effort was made to observe in the target settings on a daily basis, the complexities of a school calendar during the mandated state testing window, and the occasional absence of a paraprofessional and or student limited the ability of the researcher to ensure daily data across the duration of the entire study. It should be noted that in one school setting (triad #5), the state testing activities resulted in a weeklong absence of the focus student from the general education classroom setting during the week that the paraprofessional was trained by the teacher. This leaves a gap of time between the end of baseline and the start of treatment that reduces the strength of the data (the student was in attendance during this week, but was only served in the special education setting). In another setting (triad #1), a family emergency resulted in the absence of the paraprofessional for full week after the first two observation probes post treatment. Deven continued to attend his general education setting during this time, but data was not collected due to the absence of the trained paraprofessional.

The integrity of the training procedures around practice based coaching practices was not measured as a part of the current study. This limits the interpretations that can be made about the effects of this variable on teacher training practices.

Teachers were asked to complete a training checklist indicating that each step of the training package was delivered as intended. However, in two of the six cases, there was no audio recording to confirm or deny the inclusion of each aspect of the training procedures. This puts into question the level of treatment integrity as it relates to the training practices the teachers

engaged in with their paraprofessionals. Conducting this research in applied school settings and under the scheduling demands of the school and team meeting calendars available to the teachers and paraprofessionals limited the access of the researcher to attend all training events.

Finally, while overall interobserver agreement percentage was within acceptable limits for the study (Gast & Ledford, 2010), the use of total agreement is a limiting factor in interpreting the strength of these results. The research team did not have the availability to conduct reliability checks across all of the participating school sites. This limits the strength of the data presented here across two of the sites where interobserver agreement could not be calculated (settings #4 and #2).

Implications for Practice

Special education teachers can effectively use the curriculum: *Supporting Students with Disabilities in Inclusive Schools A Curriculum for Job-Embedded Paraprofessional Development* (Ghere, York-Barr, & Sommerness, 2002), to train their paraprofessionals to implement social facilitation strategies. The inclusion of awareness building and perspective taking activities in this curriculum may be an important component to the overall success of the training package. While most research on the training of paraprofessionals in the field has examined the learning of discrete skills or individual evidence-based practices, one might consider the implications of the current study and previous work that has used this training curriculum (Malmgren, Causton-Theoharis, & Trezek, 2005; Causton-Theoharis & Malmgren, 2005), to support training practices that help raise awareness for the underlying importance of the use of the skill. Supporting social relationships and meaningful social engagement in schools, is more than just having the ability to engage in the eight social facilitation strategies defined in this study. Understanding the importance of relating to other students, and knowing that social

belonging is a critical aspect of the school experience for everyone, may have influenced some of the results of this study that were not measured simply in examining the dependent variables. Students were more fully and meaningfully engaged in the practices and activities within the general education settings even at times when the paraprofessional was not implementing social facilitation at high rates. This is a socially significant outcome that this researcher believes influenced the overall satisfaction ratings of the participating teachers and paraprofessionals even when levels of social facilitation declined to baseline levels during the treatment phase of the study for some participants.

The involvement of the general education teacher in engaging with the paraprofessional to support social inclusion of students with low-incidence disabilities should be incorporated into all training practices. The findings from previous research that suggests that special education teachers and general education teachers may have different understandings of their roles and responsibilities in teaching and including students with low-incidence disabilities in the academic and social activities of a general education classroom should not be ignored when planning and implementing trainings for paraprofessionals that are asked to work general education classrooms or across both special and general education settings. Similarly, general and special education teachers understanding of roles and responsibilities related to the supervision, and direction of the work of paraprofessionals within general education appeared at times to be unclear during this study. Having an aspect of training practices that involve coordination and clarification of intended outcomes and training targets may be critical to the success of the training procedures.

The social validity ratings of the special education teachers in this study, strongly supports the need for paraprofessional training packages and procedures that fit in well within

the existing systems and time limitations of the job of supervising special education teachers. They all reported to the researcher that having something easy to use and preplanned was very helpful to them in delivering effective training to their paraprofessional. The relief of not having to “make it up myself” was heard more than once across the teachers participating in this study. These teachers recognized that they had limited pre-service and in-service training on how to effectively train and supervise their paraprofessionals, so it is critical that the field continue to research and develop models and training procedures that can address this gap in teacher training.

Future Research

A major limitation of the current study related to the lack of treatment fidelity measures on practice based coaching. This was a limitation both in terms of the researcher provided overview of coaching, and the teacher implementation of that coaching. Future research should examine more rigorously the impact of targeted practice based coaching training for special education teachers in conjunction with a training package such as the one used in this study. It is unclear how teachers may have taken up and engaged in coaching practices if they were provided more evidence-based training practices on practice based coaching. Researchers may want to incorporate demonstrations, rehearsals, and performance feedback of practice based coaching procedures into the initial trainings delivered to special education teachers. Since practice based coaching is a promising practice (Artman-Meeker, Fetting, Barton, Penney, & Zeng, 2015) that may be generalized across different paraprofessional training targets and procedures, its inclusion in future applied research is encouraged.

Other future research may want to include measures of the special education teachers' knowledge and skill around the training targets included in the paraprofessional training

packages. The current study did not examine the beliefs and abilities of the participating special education as it relates to social relationships and social facilitation for students with low-incidence disabilities. While teachers were trained by the researcher in the use of the curriculum by going through each step together, their current implementation of the social facilitation strategies was not measured. Teacher implementation of the strategies may impact the success or failure of the teacher delivered training. Paraprofessionals may find it difficult to take up practices that they do not view the training special education teacher as believing in or competent with. The ability to successfully train paraprofessionals through the use of coaching procedures may certainly be put into question, if the special education teacher fails to demonstrate a thorough understanding of the skills being targeted for training.

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Appendix A

Verbal Assent Script

This script is to be shared with student participants in the study after receiving parent consent for their son or daughter to participate. This script will be stated to the student after the researcher has dropped in on 2-3 days in the special education and general education setting (prior to data collection commencing). Students should recognize the researcher as an adult that has spent at least a small amount of time in the school and classroom.

“My name is Jeremy Erickson, and I’m a student at the University of Washington. I am doing a project looking at how students interact and work with each other in schools. My project is called a research study.

The study looks at the ways that students interact with one another and the ways in which teachers help students work and talk together. If you participate in the study, I will spend some time watching the class work together. I will be in the classroom for 10-20 minutes each day, taking some notes on the interactions happening in the classroom.

I’m doing this study as a project for school. I will be sharing my findings with my team at school, and with other researchers interested in school interactions. I won’t be including real student or teacher names in my written project.

Your mom or dad have said that it is okay for you to be in this study. You don’t have to be in this study if you don’t want to be. If you want to stop you can tell me, or one of your teachers. Stopping being in the study, won’t be any problem. Do you have any questions? If you have any questions, please let me know anytime.

Appendix B

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Paraeducators

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Special Education Recommended Core Competencies

To work in education and related services programs for children and youth with disabilities, paraeducators will demonstrate:

1. understanding the value of providing instructional and other direct services to all children and youth with disabilities;
2. understanding the roles and responsibilities of certificated/licensed staff and paraeducators;
3. knowledge of (a) patterns of human development and milestones typically achieved at different ages, and (b) risk factors that may prohibit or impede typical development;
4. ability to practice ethical and professional standards of conduct, including the requirements of confidentiality;
5. ability to communicate with colleagues, follow instructions, and use problem solving and other skills that will enable the paraeducator to work as an effective member of the instructional team;
6. ability to provide positive behavioral support and management;
7. knowledge of the legal issues related to the education of children and youth with disabilities and their families;
8. awareness of diversity among the children, youth, families and colleagues with whom they work;
9. knowledge and application of the elements of effective instruction to assist teaching and learning as developed by the certificated/licensed staff in a variety of settings;
10. ability to utilize appropriate strategies and techniques to provide instructional support in teaching and learning as developed by the certificated/licensed staff;
11. ability to motivate and assist children and youth;
12. knowledge of and ability to follow health, safety, and emergency procedures of the agency where they are employed;
13. awareness of the ways in which technology can assist teaching and learning; and
14. awareness of personal care and/or health related support.

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e*Updated 9/15/2010*

Appendix C

Unit 7: How to Interact? Student Relationships
Paraprofessional Handout 8 • New Learning



Facilitating Interactions Among Students

Listed in the table below are strategies and specific examples for helping students learn to successfully interact with each other.

- Read through the strategies and examples.
- Think about students that you support. Are there times that you have used these strategies to promote more successful student interactions?
- Share your thoughts and examples.

Strategy	Examples
Modeling ways to interact	<p>"Jasmine would be able to play this game if you could show her how to match her cards."</p> <p>"Rebecca has a brand new way to communicate. It is called an intro-talker and she can show you how to have a conversation with her."</p>
Highlighting similarities	<p>"You and Eric might want to compare your essays, each of you have had similar experiences."</p> <p>"I heard Monica say that she also wanted to see that movie. Maybe you could go together."</p>
Identifying varied strengths and differences	<p>"It sure works great when everyone in a group is good at doing different things. How did each group member help get your project done?"</p> <p>"You and Carlos will make great book report partners! You have a talent for writing, and Carlos has a talent for drawing. Together, you should end up with a super project!"</p>
Teaching interaction skills	<p>"Randy, let's practice how you could call a friend on the phone and invite him to go to a movie."</p> <p>"What is another way that you could ask Patrick to borrow his ruler?"</p>
Interpreting behaviors	<p>"Mark talks aloud during math because it helps him think through the equations."</p> <p>"When Brent hits his hand on the desk, he is letting us know that he is frustrated. He is working hard to learn other ways to let people know what he is feeling."</p>

Adapted with permission from: Kronberg, R., York-Barr, J., & Doyle, M.B. (1996). *Module 2: Curriculum as Everything Students Learn in School: Creating a Classroom Community*. Baltimore: Paul H. Brookes.

Appendix D

Facilitating Interactions Among Students

Listed in the table below are strategies and specific examples for helping students learn to successfully interact with each other.

- Read through the strategies and examples
- Think about students that you support. Are there times that you have used these strategies to promote more successful student interactions?
- Share your thoughts and examples.

Social Facilitative Behaviors for Paraprofessionals

<p>1. Modeling ways to interact with the student with IEP</p> <p>“Ramone can follow along with this game if you show him how to match the cards like this.” “How does this game work? Oh, I see. You need to match the green cards to the green cards and put the red ones with the red ones.”</p>
<p>2. Highlighting similarities between student with IEP and peers</p> <p>“You and Samantha should compare your pictures. It looks like each of you have the same favorite sport.” “Wow! You both love Paw Patrol. Shane is into that . . . you should ask him about his favorite pup.” “I heard Monique say she also wanted to see that movie. Maybe you could go together.”</p>
<p>3. Identifying strengths of student with IEP for peers</p> <p>“It sure works great when everyone in a group is good at doing different things. How did each member help get your project done?” “You and Carlos will make great book report partners! You have a talent for writing, and Carlos has a talent for drawing. Together, you should end up with a super project!”</p>
<p>4. Direct teaching of interaction skills</p> <p>“Juan Carlos isn’t looking. I don’t think he heard you. You could ask again. Make sure he sees you.” “Trisha could use some help with holding the paper down, why don’t you ask her if you can help her? She likes it when classmates ask before they help.” “What is another way that you could ask Patrick to borrow his ruler?”</p>
<p>5. Interpreting behaviors for peers</p> <p>“Theresa, you talk aloud during math because it helps you think through the equations, right?” “That is usually a sign that Sarah is feeling a little anxious.” “When Brent hits his hand on the desk, he is letting us know that he is frustrated. He is working hard to learn other ways to let people know what he is feeling.”</p>
<p>6. Redirecting student interactions to peers</p> <p>“If you want to know how Jack is doing, just ask him yourself. Just make sure he can see you when you ask.” “I don’t know. He’s sitting right over there. I bet he’d tell you if you ask him directly.” “See if you can get John to help you with this problem.” “Why don’t you ask Sam that question?” “Anita might be willing to check to see if your answers are correct.” “Hmm, I’m not sure what you should do next. Why don’t you ask your classmate what the assignment is?”</p>
<p>7. Directly asking peers to provide assistance or to engage</p> <p>“Mary, will you please help Brian with his worksheet?” “If you point to and read the question, he can keep his place and answer.” “Would you be willing to be his partner and read out loud to him?”</p>
<p>8. Increasing proximity of student with IEP to peers (vice versa)</p> <p>“Brian, why don’t you go and sit with your lab group?” “Hmm . . . the group is about to start and you are still way over here!” “Uh, guys, I think you are missing someone . . .”</p>

Carter, E. W., Moss, C. K., Asmus, J., Fesperman, E., Cooney, M., Brock, M. E., ... & Vincent, L. B. (2015). Promoting Inclusion, social connections, and learning through peer support arrangements. *TEACHING Exceptional Children*, 48(1), 9-18.

Appendix E

Demographic Questionnaire

(please answer all questions that you feel comfortable responding to)

Name:

Age:

What is your race/ethnicity?

What is your primary language?

How long have you been a special education teacher?

How long have you worked in this school?

How long have you worked with the special education assistant in this study?

What is your educational level?

What type of training did you receive related to para training and supervision as a special education teacher **before** taking your current role in this school?

What type of training have you received related to para training and supervision as a special education teacher **after** starting this position?

Have you received any training specific to supporting student interactions and relationships prior to this study? If yes, please briefly describe the nature of the training and approximately when you received the training.

Any other relevant information?

Appendix F

Demographic Questionnaire

(please answer all questions that you feel comfortable responding to)

Name:

Age:

What is your race/ethnicity?

What is your primary language?

How long have you been a special education assistant?

How long have you worked in this school?

How long have you worked with the focus student in this study?

What is your educational level?

What type of training did you receive related to your duties as a special education assistant **before** taking your current role in this school?

What type of training have you received related to your duties as a special education assistant **after** starting this position?

Have you received any training specific to supporting student interactions and relationships prior to this study? If yes, please briefly describe the nature of the training and approximately when you received the training.

Any other relevant information?

Appendix G

Study Training Checklist	Completed
1. Schedule a time to train your para on Unit 7 of curriculum	
2. Notify Jeremy Erickson of the date/time/location of para training	
3. Make copies of the Unit 7 Para Handouts for your para (one copy for each para and one for you to facilitate training with)	
4. Go over each handout with the para and have the para complete the reflection and new learning	
5. Have para review and share ideas about Handout 8 (Paraprofessional Social Facilitative Behaviors)	
6. Have para answer questions completely on Handout 11 (follow up activity)	
7. Answer any questions the para may have about unit 7 and social facilitation skills during the training	
8. Ensure that the para takes the final page (Handout 11) to the general education teacher and shares the strategies that they have selected and ask for input.	
9. Review with your para any input that the general education teacher provided and make 3 copies of the last handout (the one that para filled out and shared with general education teacher), one for your records, one for the para, and one for Jeremy (he will pick up the copy)	
10. Follow up with your para about the use of the social facilitative behaviors in the general education setting. Check in with them about progress and problem solve on going concerns or issues (*observation and feedback/coaching are the best support for training new/desired skills)	

Appendix H

Treatment Integrity Checklist

While reviewing the recordings of the paraprofessional training provided by the special education teacher, please mark off each of the elements below as they are completed in the recording of the training.

- The perspective taking activity / Circle of Friends Discussion
- The importance of supporting social interactions/relationships
- The paraprofessionals role in facilitating social interactions
- Handout 8 – Strategies for increasing social interactions of students
- Application of new knowledge and skills (description/discussion of follow up activities)

Appendix I

Special Education Teacher Training Tracker:

If you engage in additional training or support to you paraprofessional around social facilitation (beyond the workshop covering Unit 7 of the provided curriculum), please note the date of the practice in the boxes to the right of the appropriate training practice.	Date you provided this support	Date you provided this support	Date you provided this support	Date you provided this support	Date you provided this support	Date you provided this support
Discussed with paraprofessional social facilitation strategies prior to their time in general education						
Observed the paraprofessional during time in general education and provided performance feedback with notes/data to support						
Observed the paraprofessional during time in general education (no feedback provided)						
Provided the paraprofessional with shoulder to shoulder coaching on social facilitation skills in general education						
Provided the paraprofessional with modeling of specific social facilitation skills in <i>special education setting</i>						
Provided the paraprofessional with modeling of social facilitation skills in the <i>general education setting</i>						
Debriefed and problem solved with the paraprofessional around social facilitation skills after their time in general education						
Other training practices on social facilitation (please briefly describe):						

Appendix J

COACHING SUPPORT FOR SOCIAL FACILITATION

Adding coaching involves a three step coaching process that can be repeated. The steps include a planning meeting, an observation, and a feedback meeting.

Connect with your para and have a brief planning meeting prior to observing and coaching on the skills.

Planning meeting:

The planning meeting should occur in person.

1. Start with questions
 - How are the social facilitation strategies going in fitness?
 - Have these strategies been working to increase the focus student's interactions with her general education peers?
 - In terms of increasing interactions between the focus student and her peers, can you identify any skills that you would like to get better with using consistently or successfully?
2. Set a time and date for observation / coaching in the classroom
 - Look specifically for facilitation strategies that lead to interactions between focus student and general education peers (these will be the practices that you want to focus on for your observation and coaching)
 - Let your para know when you will be there to observe and the skill(s) you want to focus on
 - With your para decide on initial coaching activities that will be provided (see some options below)
 - Modeling – you will model facilitating social interactions between focus student and peers (make sure that para knows you will be modeling the skills that you want her to be using)
 - Taking Notes / Data and doing a debrief after the observation
 - Problem-Solving Discussion
 - Shoulder to Shoulder Guided Practice
 - Role Play outside of the context of fitness

Observation:

1. Note the specific skills you observe during the observation around social facilitation and interactions between the focus learner and her general education peers
2. Note what's working well and what you see as areas for possible improvement.
3. Note any barriers you observed for social interactions
4. If you engage in any coaching activities during your observation note those down as well

Feedback Meeting:

The feedback meeting should occur in person and soon after the observation (the same day is preferred, no later than the next day)

1. Share positive and corrective feedback (be specific)
2. Identify one or two specific social facilitation skills or strategy that you want to focus your coaching around.
3. Engage in coaching activity around the skill(s) (modeling, role play, discussion, shoulder to shoulder practice, problem solving)
4. Specify when / how you will follow up with the para (another observation, check in about the strategies during afternoon debrief, etc.).

Appendix K

Weekly Paraprofessional Self-Rating of Social Facilitative Behaviors:

Week of _____ (Monday's date)

This week I implemented the targeted social facilitation skills (when appropriate) with the focus student in general education (please rate your use of social facilitation skills this week from 1-4):

None of the opportunities	A small number of the opportunities	Most of the opportunities	All of the opportunities
1	2	3	4

Weekly Paraprofessional Self-Rating of Social Facilitative Behaviors:

Week of _____ (Monday's date)

This week I implemented the targeted social facilitation skills (when appropriate) with the focus student in general education (please rate your use of social facilitation skills this week from 1-4):

None of the opportunities	A small number of the opportunities	Most of the opportunities	All of the opportunities
1	2	3	4

Weekly Paraprofessional Self-Rating of Social Facilitative Behaviors:

Week of _____ (Monday's date)

This week I implemented the targeted social facilitation skills (when appropriate) with the focus student in general education (please rate your use of social facilitation skills this week from 1-4):

None of the opportunities	A small number of the opportunities	Most of the opportunities	All of the opportunities
1	2	3	4

Weekly Paraprofessional Self-Rating of Social Facilitative Behaviors:

Week of _____ (Monday's date)

This week I implemented the targeted social facilitation skills (when appropriate) with the focus student in general education (please rate your use of social facilitation skills this week from 1-4):

None of the opportunities	A small number of the opportunities	Most of the opportunities	All of the opportunities
1	2	3	4

Appendix L

Peer Interaction and Paraprofessional Facilitative Behaviors Observation Instrument
 Student – Paraprofessional # _____ Observation # _____ Start Time _____
 Date _____ Observer _____ End Time _____

PEER INTERACTION	FACILITATED OR SPONTANEOUS	FACILITATIVE BEHAVIOR OF PARA	PARA PROX.	RELEVANT EVENTS OR ACTIVITY INFORMATION
1	FP FO S	MO HS IS DT IB RD DA PP O	L3 M3	
2	FP FO S	MO HS IS DT IB RD DA PP O	L3 M3	
3	FP FO S	MO HS IS DT IB RD DA PP O	L3 M3	
4	FP FO S	MO HS IS DT IB RD DA PP O	L3 M3	
5	FP FO S	MO HS IS DT IB RD DA PP O	L3 M3	
6	FP FO S	MO HS IS DT IB RD DA PP O	L3 M3	
7	FP FO S	MO HS IS DT IB RD DA PP O	L3 M3	
8	FP FO S	MO HS IS DT IB RD DA PP O	L3 M3	
9	FP FO S	MO HS IS DT IB RD DA PP O	L3 M3	
10	FP FO S	MO HS IS DT IB RD DA PP O	L3 M3	
11	FP FO S	MO HS IS DT IB RD DA PP O	L3 M3	
12	FP FO S	MO HS IS DT IB RD DA PP O	L3 M3	
13	FP FO S	MO HS IS DT IB RD DA PP O	L3 M3	
14	FP FO S	MO HS IS DT IB RD DA PP O	L3 M3	
15	FP FO S	MO HS IS DT IB RD DA PP O	L3 M3	
16	FP FO S	MO HS IS DT IB RD DA PP O	L3 M3	
17	FP FO S	MO HS IS DT IB RD DA PP O	L3 M3	
18	FP FO S	MO HS IS DT IB RD DA PP O	L3 M3	
19	FP FO S	MO HS IS DT IB RD DA PP O	L3 M3	
20	FP FO S	MO HS IS DT IB RD DA PP O	L3 M3	
21	FP FO S	MO HS IS DT IB RD DA PP O	L3 M3	
22	FP FO S	MO HS IS DT IB RD DA PP O	L3 M3	
23	FP FO S	MO HS IS DT IB RD DA PP O	L3 M3	
24	FP FO S	MO HS IS DT IB RD DA PP O	L3 M3	
25	FP FO S	MO HS IS DT IB RD DA PP O	L3 M3	
TOTAL:				

Key: FP= Facilitated by Para FO= Facilitated by Other Adult S= Spontaneous MO= Modeling HS= Highlighting Similarities IS= Identifying Strengths DT= Direct Teaching IB= Interpreting Behavior RD= Redirecting Interactions to Peers DA= Directly Asking Peers to Engage PP= Increasing Physical Proximity O= Other

Field Notes For Observation

Briefly describe the lesson or activity and instructional grouping of student observed.

Briefly describe the nature of the peer interactions that were observed during this observation.

Other than the paraprofessional, did other adults facilitate peer interactions with the focus student during this observation? Who? How did the facilitate interactions?

Describe the paraprofessional’s proximity to the focus student during this observation (e.g., “spent the majority of the observation in close proximity to student and provided direct support.” “spent about half of the observation near the student, and half the observation supporting others or observing from a distance”).

Additional observations / comments:
 (was there anything else of note that influenced peer interactions during this observation?)

Appendix M

About The Job-Embedded Training On Social Facilitation – Please rate your agreement with the following statements

Question	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
	1	2	3	4	5
1 This training package would be appropriate for working with a variety of paraprofessional staff					
2 This training was beneficial for me to conduct with the paraprofessional included in the study					
3 I would use this training to train other paraprofessionals on social facilitation					
4 This training was consistent with common sense and good practice in helping staff to work effectively					
5 I would recommend this training package to other special education teachers					
6 This training package was effective in training my paraprofessional to implement the targeted skills					
7 I was able to implement the training procedure in a timely manner					
8 This training package fits in well with my existing paraprofessional training (supervisor and training) procedures					
9 I can effectively use this training package to train paraprofessionals with little to no changes to my program and learning structure (e.g., team meetings, daily debriefing practices, etc.)					
10 I like the procedures included in the training package that I was asked to use with my paraprofessional					
11 This training package helped me to be a more effective trainer					
12 This training package resulted in improved social experiences for my student					

Please answer the following questions (If you need more space, feel free to use the back or attach additional pages).

13. How (if at all) was the job-embedded training curriculum on social facilitation helpful for you as a special education teacher in supporting your paraprofessional training practices?

14. What roadblocks or barriers (if any) did you experience in effectively using the training with your paraprofessional?

15. What impact (if any) did you see as a result of using the training package with your paraprofessional?

16. What changes (if any) to the training package would you recommend? Please explain why...

15. Please make any other comments you would like to offer

Appendix N

About The Job-Embedded Training On Social Facilitation – Please rate your agreement with the following statements

Question	Strongly disagree	Moderately disagree	Slightly Disagree	Slightly Agree	Moderately Agree	Strongly agree
	1	2	3	4	5	6
1 I engaged in more social facilitation to support interactions between students with disabilities and their non-disabled peers as a result of this training package						
2 This training was consistent with common sense and good practice in helping staff to work effectively						
3 I would recommend that other special education teachers use this training package with the paraprofessional staff that they work with						
4 This training package was effective in helping me recognize the importance of social interactions for students with disabilities						
5 This training package was effective in helping me implement social facilitation strategies						
6 I like the procedures included in the training package						
7 This training package helped me to be a more effective paraprofessional						
8 This training package helped my special education teacher to be a more effective trainer to paraprofessionals						
9 This training package resulted in more communication between myself and the general education teacher in the targeted setting						
10 This training package resulted in improved social experiences for my student						
11 The social interactions I supported between the student with disabilities and their peers were meaningful						

Please answer the following questions (if you need more space, feel free to use the back or attach additional pages):

12. How (if at all) was the job-embedded training curriculum on social facilitation helpful for you as a paraprofessional?

13. What barriers or roadblocks (if any) to supporting social interactions between students with disabilities and their peers without disabilities did you encounter after you received the training with your special education teacher?

14. How (if at all) did this training impact your collaboration with the special education teacher?

15. How (if at all) did this training impact your collaboration with the general education teacher?

16. What changes (if any) to the training package would you recommend? Please explain why...

17. Please make any other comments you would like to offer

