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The Impact Of Formal Classwide Peer Support Training On The Occurrence Of Initiated And Reciprocal Peer Interactions Of Students

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THE IMPACT OF FORMAL CLASSWIDE PEER SUPPORT TRAINING ON THE OCCURRENCE OF INITIATED AND RECIPROCAL PEER INTERACTIONS OF STUDENTS WITH SIGNIFICANT DISABILITIES IN INCLUSIVE PHYSICAL EDUCATION CLASSES

by

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ABSTRACT

This research study examined the effects of classwide peer support training on the occurrence of initiated and reciprocal peer interactions of students with significant disabilities in two inclusive physical education classes. An AB research design was used to document changes in the occurrence of initiated and reciprocal peer interactions of students with significant disabilities following the provision of peer support training to all of their classmates. Four students with significant disabilities were observed in the study and baseline and post-intervention data on the occurrence of peer interactions were collected.

The peer support training was provided to classes where four students with significant disabilities were included (two students in each classroom). Thirty-seven peers in the physical education classes were taught to (a) identify expectations within a single activity designed for the entire class in which a student with significant disabilities could also participate, (b) utilize the concept of partial participation to meaningfully include a student with significant disabilities in physical education classroom activities, (c) address priority educational goals from a student's Individual Education Plan during group activities, (d) use positive feedback and reinforcement to encourage participation, (e) program and use augmentative communication devices for meaningful participation in activities occurring in a physical education classroom, and (f) employ strategies to facilitate the development of peer relations and encourage interactions in ways that provide alternatives to an overreliance on paraprofessionals.

After the peer support training was provided to the students in both physical education classes, follow-up observations were conducted to determine the impact of that peer support training on the occurrence and type of peer interactions of students with significant disabilities in

inclusive physical education classes. Increases in the occurrence of interactions, as well as increases in both initiated and reciprocal peer interactions were documented as additional opportunities for students with significant disabilities to interact with their classmates were created. With the total number of peer interactions increasing following the training for each of the four boys, the success of the strategies employed could lead to increased levels of acceptance and access to other areas of the general education environment alongside their peers without disabilities.

This work is dedicated to my wife, Eileen, whose patience, encouragement, and love have supported me throughout this journey. You continued your support while balancing the needs of our family in two separate states across 1100 miles! Your strength and commitment to the completion of this endeavor have allowed this dream to become a reality. I love you!

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am just now beginning to understand how that work has impacted thousands of lives. Thanks for everything!

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Upon moving to Vermont, my greatest concern was whether I would be able to identify an acceptable site in which to conduct my research study. My fears were eased the first day I met Principal Jeanne Oakman and Linda Smith, case manager for the students in the study at Poultney High School. Mrs. Oakman is a dynamic leader and very much a visionary at her school. Mrs. Smith, the school's current Teacher of the Year, has established a reputation on the campus as someone who could provide numerous supports and strategies for teachers working with students with and without disabilities and is perceived as a valuable resource to the entire school. It was clear from our first meeting that the three of us had similar outcomes in mind for the students with more significant disabilities at the school. Principal Oakman and Mrs. Smith were looking for support in understanding *how* students with more significant needs could be

meaningfully included into general education contexts and were excited about the kinds of supports that could be provided as part of this dissertation study. The school had transformed, in two years, from having their students with significant disabilities completely segregated from the campus in a building called “The Apartments” to returning them to the existing high school and personnel at the school were beginning to identify the next possible steps toward creating more inclusive opportunities. In retrospect, the timing of this study could not have been better.

Dave Capman is a dedicated, caring physical education teacher who has served the Poultney area for a number of years as both a teacher and coach. He was very enthusiastic about the implementation of this study from our first meeting and was supportive of my efforts throughout the study. He was flexible enough with his teaching schedule to allow me to introduce myself to his students and to give up time in his class schedules for me to deliver the peer support training to the students in his classes. He also supported my baseline and post-intervention observations and was involved in the discussions that took place as the study proceeded. He was the consummate professional and his support for the study is greatly appreciated.

I would also like to share my appreciation for the thirty-seven students who took part in the peer support trainings and for the four students with significant disabilities who were observed following the provision of that training. The students in the peer support trainings were attentive and excited about the new strategies they learned and the pre and post surveys demonstrated an increase in knowledge levels in identifying specific ways to support their peers without disabilities after the training. Although it may seem that the students with significant disabilities had little to do in this study, a different support environment was clearly created after

the intervention and the students with significant disabilities had to adjust to a new level of access and interactions, which they did remarkably well. One student, in particular, significantly increased his overall interactions with his peers following the study, two students had a steady increase, and one, although an increase was seen, still struggled with the attention and social interactions for reasons that will be explained in a later chapter.

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CHAPTER ONE: INTRODUCTION

This research study examined the effects of a classwide peer support training on the occurrence and type of peer interactions of students with significant disabilities in inclusive physical education classes. An AB research design was employed to observe changes in the occurrence and type of peer interactions of students with significant disabilities included in two physical education classrooms. Four students with significant disabilities were observed in this study. Baseline data on the occurrence and type of peer interactions were collected. The occurrence of peer interactions is the number of 30-second intervals where interactions between students with significant disabilities and their peers without disabilities were observed in 30-minute daily sessions while the type of interactions refers to whether those interactions observed were initiated by the student with significant disabilities or were reciprocal responses following an interaction or prompt from another peer.

Research Question

"Will the occurrence of initiated and reciprocal peer interactions of students with significant disabilities within inclusive physical education classes increase following the provision of formal classwide peer support training?"

Purpose of the Study

This AB research design study examined the impact of formalized, classwide peer support training on the occurrence and type of peer interactions of students with significant disabilities in two inclusive secondary physical education classes.

Rationale of the Study

As students approach adolescence, peer interaction becomes increasingly important. Students in high school are particularly vulnerable to the negative impact of having few or no close friends (Hunt & Goetz, 1997). Further, the increased need for intimacy during adolescence can often be met only through close peer relations (Fisher, Sax, & Pumpian, 1999). Students with significant disabilities experience fewer opportunities to practice, refine, and expand their social skills, which makes it even more difficult to develop and maintain meaningful friendships (Ryndak & Billingsley, 2004).

Given access to the general education settings, curriculum, and peers, students with significant disabilities have opportunities to consistently practice the skills necessary to develop meaningful peer relationships. As students with significant disabilities participate more fully in general education contexts, they must receive the intentional supports, instruction, and opportunities needed to meaningfully access the general education curriculum. However, at the secondary level, meeting these expectations remains a considerable challenge. Secondary school classrooms are often characterized by increasingly complex curricular content, an increase in the overall pace of instruction, content that is primarily lecture-driven, and increasingly raised academic expectations for student performance as federal legislation continues to raise the bar for all students.

The peer culture in schools also changes substantially during adolescence, as peer relationships and interactions become even more complex, happen within extremely dynamic peer systems, move beyond the immediate intervention and oversight of adults, and often develop beyond the typical school day, in community agencies, at sporting events, and at the

homes of other peers (Brown, 2004). Without the provision of well-designed, intentional support strategies, students with significant disabilities may, indeed, be physically, but not socially, included among their peers without disabilities while in general education settings. If general education curriculum and student outcomes become the primary focal point for instructional planning and support delivery, effective strategies will be needed to ensure that students with significant disabilities access learning and social opportunities available within those general education contexts.

Development of Positive Peer Relationships

The impact of peer development on the lives of adolescents with significant disabilities can be substantial. When students with significant disabilities have access to their peers without disabilities as they are developing peer relationships, those students with significant disabilities can practice and refine accepted social skills, continue to access various support systems, share mutual activities and friendships, and observe and master acceptable peer norms and values (Hartup, 1999; Rubin, Bukowski, & Parker, 1998). Adolescents often spend proportionately more of their time with their peers as they get older, receiving less direct support from the adults in their lives. This shift in natural supports intensifies the influence of peer interaction on the overall development of meaningful peer relationships (Hartup & Stevens, 1997).

Research has documented the benefits of peer support for adolescents with significant disabilities (Goldstein, Kaczmaerk, & English, 2002; Hunt & Goetz, 1997; Ryndak & Fisher, 2003). Specifically, interaction with general education peers may play a role in academic, functional, and social skill development, as well as contribute to increased social competence, successes in mastering priority educational goals and objectives identified by support teams,

friendship development and maintenance, and overall enhanced quality of life. Despite these potential benefits, interaction among middle and high school students with significant disabilities and their general education peers occurs infrequently (Carter & Kennedy, 2006).

Few Opportunities for Social Interactions

Numerous studies examining peer interactions at the secondary level confirm that few interactions between students with significant disabilities and their general education peers typically occur apart from intentional intervention efforts (Carter, Hughes, Guth, & Copeland, 2005; Cutts & Sigafoos, 2001; Mu, Siegel, & Allinder, 2000). It is critical, initially, to consider any factors that may contribute to these minimal amounts of social interactions. The extent to which adolescents interact with their peers may be influenced by the level of social and related skills students have mastered and the locations within which students spend the predominant portions of their school day (Brown & Klute, 2003). For students with significant disabilities, these two factors are of particular importance as the lack of skills and access contribute to limited social interaction with their peers without disabilities. Although considerable diversity exists among individuals with significant disabilities, substantial limitations in social interaction skills are widely prevalent (Leffert & Siperstein, 2002; McLean, Brady, & McLean, 1996). This study has intentionally incorporated an inclusive environment (P.E. classes) and skill development in supporting students with significant disabilities (peer support training) to assure that both of those factors are considered.

Peer Supports

One support strategy gaining considerable attention in the field of special education is the use of formalized peer supports in general education classrooms to address the diverse needs of students with significant disabilities within those contexts. Numerous studies on the use of peer supports for students with significant disabilities have focused on the benefits of one-to-one support models. Far fewer studies have examined the benefits of having two or more students trained to provide supports for students with significant disabilities in inclusive contexts. In the studies that have been done on multiple supports, however, results indicate that numerous peers available to the support arrangement in the classroom may increase the amount of systematic instruction provided to students with significant disabilities (Brady, Shores, Gunter, McEvoy, Fox & White, 1984, Campbell, 2004; Carter & Kennedy, 2006). In addition, there are simply more opportunities created for peers to provide immediate instructional and social feedback, leading to an overall increase in interactions with peers without disabilities in the classroom and with the general education curriculum (Brady, Shores, McEvoy, Ellis, & Fox, 1987; Carter & Kennedy, 2006; Hughes & Carter, 2006). Few studies, however, have investigated the impact of training an entire class of peers to identify and implement physical, social, emotional, and academic accommodations and modifications necessary to increase the occurrence of peer interactions taking place in those environments for students with significant disabilities.

The general education classroom is a natural environment for the development of peer interactions and relationships of students with significant disabilities. Peer interactions have been

empirically linked to increased achievement (Johnson, 1981; Yager, Johnson, & Johnson, 1985) and increased self-esteem (Branthwaite, 1985; Kirova, 2001; Nave, 1990). However, for students with significant disabilities, these interactions and relationships may not occur naturally without appropriate supports (Evans, Salisbury, Palombaro, Barryman, & Hollowood, 1992)

Need for Planned Supports

Students with significant disabilities may experience difficulty adequately performing any number of important and accepted social skills, including engaging in reciprocal interactions, initiating communication with peers, extending social exchanges, adapting to new circumstances and challenges in the environment, and identifying and interpreting relevant social cues. As students enter adolescence, the complexity of peer interaction further intensifies, requiring adolescents to perform skills related to establishing and sustaining close give-and-take relationships, adjusting and reacting to the communication needs of themselves and others, using both inferential and figurative language, and monitoring social behaviors (Bierman & Montminy, 1993).

Additional Barriers

Typical secondary school environments often do not support social interaction between individuals with significant disabilities and their general education peers (Jackson, Ryndak, & Billingsley, 2000). In general, students with significant disabilities infrequently attend classes with their general education peers (U.S. Department of Education, 2006) and often participate in typical school activities at diminished rates as they transition from primary school environments to secondary ones (Simeonsson, Carlson, Huntington, McMillen, & Brent, 2001). As this

transition occurs, isolation from relationships with general education peers can become even more pronounced for students with significant disabilities. Numerous changes within the school contexts take place during the secondary school years. Unlike in primary schools, where students spend most or all of their school day in a single classroom accompanied by the same peers, classmates in secondary schools typically change classrooms and school environments from one class period to the next. Students travel among classrooms, making it difficult for them to have any kind of sustained access to the same group of peers. Moreover, lecture-dominated instructional strategies and the increased emphasis on academics and accountability also may limit opportunities for social interaction in many high school classroom settings.

In addition to physical and instructional variables, the social variables of secondary school environments may influence the number of opportunities available for social interactions. Peers without disabilities often feel they do not have the skills and knowledge to interact with and support their classmates who have significant disabilities (Copeland, Hughes, Carter, Guth, Presley, Williams, & Fowler, 2004). This lack of training and awareness suggests the need for incorporating support-based, intentional interventions in which aspects of school environments are proactively arranged and specific supports are taught to promote increased peer interaction.

Adolescents with significant disabilities' often lack skills for initiating and sustaining frequent, quality interactions with their peers without disabilities, which may actually reflect their limited learning and interaction opportunities as much as their actual level of cognitive ability (Ryndak & Fisher, 2003). Therefore, increasing social interaction among adolescents with and without disabilities remains a consistent and prominent focus of legislative, policy, and

research initiatives of legislation such as the Individuals with Disabilities Education Improvement Act (IDEIE, 2004).

Improving the social outcomes of students with more significant disabilities requires intentional efforts on the part of educators, who play a prominent role in providing students with the skills they need to interact meaningfully with their peers and ensuring that environments are optimally arranged to foster lasting peer interactions. The promotion of social interaction among students with and without disabilities has been identified as an essential competency for general educators, special educators, and paraprofessionals (Council for Exceptional Children, 2003; Educational Testing Services, 2005). To assure that this is happening, educators must have an empirically-validated base of interventions from which to draw (Odom, Brantlinger, Gersten, Horner, Thompson, & Harris, 2005; Pavri, 2004). One such intervention is the use of trained peer supports.

Unless educators take deliberate steps to facilitate social interaction among students with and without significant disabilities, however, those social relationships are unlikely to occur. Supports available to students with significant disabilities within a given school setting may be more relevant to social outcomes than the level of integration of the setting itself, thus highlighting the need to increase the social supports available to students with disabilities across high school settings (Carter, Hughes, Guth, & Copeland, 2005).

Over the past few decades, a dramatic and fundamental shift has occurred in educational expectations for students with disabilities and educators are being called upon to provide students with disabilities, including students with significant disabilities, with meaningful access to the same challenging and relevant curriculum established for students without disabilities.

This major shift in service delivery and outcomes is challenging many educators to think differently about the location in which students with disabilities spend their school day and the emphasis and focus of their educational programming within that environment (Browder & Cooper-Duffy, 2003). Although instructional goals are individually determined, the general education curriculum now assumes a more prominent role as the context for addressing those goals and their accompanying short-term objectives. Schools and school districts are now held accountable for ensuring that students with disabilities demonstrate adequate progress toward standards directly aligned with the general curriculum. These high expectations for what students with disabilities can and should accomplish are intended to improve educational outcomes for every child (No Child Left Behind, 2001)

Increasingly, researchers and practitioners are calling for new support models that enable students with significant disabilities to access curriculum fully and demonstrate progress within that curriculum (Cushing, Clark, Carter, & Kennedy, 2003; Giangreco, Halvorsen, Doyle, & Broer, 2004). Peer support strategies have been used to allow students with significant disabilities to attain modified learning outcomes and facilitate social interactions of students with and without disabilities. These strategies represent a promising intervention for promoting social interaction for students with significant disabilities within general education settings.

Definition of Terms

AB Design

A single subject research design that contains one baseline (A) and one treatment (B).

Accommodations

Changes to *how* students are expected to learn (i.e., instruction) and to demonstrate what they have learned (i.e., assessment). When accommodations are made, expectations for student achievement do not have to change. Accommodations should be made based upon individual learner characteristics, not the particular disability. Accommodations involve a wide range of techniques and support systems in areas such as: methods and materials, assignments and assessments, learning environment, time and scheduling, and special communication systems. (Beech, 1999).

Alternate Assessment

A way to measure the performance of students with disabilities who are unable to participate in general large-scale assessments used by districts or states (as determined by the IEP team). Alternate Assessment strategies should include information from a variety of sources collected by multiple people across time and settings. The Portfolio Assessment of Alternate Grade Expectations (PAAGE) is the Vermont State assessment of the general curriculum at an alternate achievement standard. The PAAGE is a standards-based evaluation of a student's learning over the course of the school year in three content areas: Communication (Reading/Writing), Problem Solving (Math), and Inquiry (Science). It is designed to measure sustainable learning on selected outcomes for students with multiple complex disabilities, in a way that is valid and reliable.

Assessment

Assessment should be a part of a comprehensive assessment program that ensures assessments and grades lead to timely, accurate feedback on specific, standards-based learning goals. Classroom assessments-from quizzes and projects to term papers and tests- should provide schools with powerful tools to boost achievement (Marzano, 2006)

Assistive Technology

Any item, piece of equipment, product, or system that is used to increase, maintain, or improve functional capabilities of individuals with disabilities. Under the Individual's with Disabilities Education Improvement Act (IDEIA, 2004), assistive technology devices can be used in the educational setting to provide a variety of accommodations or adaptations for students with disabilities (Individuals with Disabilities Education Improvement Act of 2004)

Augmentative Communication

The supplementation or replacement of speech through the use of aided or unaided techniques. Sign language, gestures, and finger spelling are examples of unaided communication, whereas aided communication is associated with technology. An example of aided communication would be a computer-based system that supports verbal and written communication (Individuals with Disabilities Education Improvement Act of 2004).

Baseline

Beginning observations prior to intervention; level of functioning established or measured without any active intervention from the observer. The descriptive function of baseline provides information about the extent of the student's problem while the predictive function determines what the behavior will be like in the future without the intervention (Kazdin, 1982).

Communication Disabilities

Include any visual, hearing, or speech impairments that limit a person's ability to communicate. (Brackenburry, Burroughs, & Hewitt, 2008).

Developmental Disabilities

A severe and long lasting disability which is the result of a mental and/or physical impairment, occurs before age 22, is likely to continue indefinitely, reflects the person's need for specialized services and/or treatment, and results in substantial functional limitations in three or more areas. The areas include: self-care, self-direction, economic self-sufficiency, independent living, learning, receptive and expressive language, and mobility. (Vermont Department of Education, 2007)

Education Team

The education team is comprised of persons who share responsibility for educating groups of students with and without disabilities. The education team members interact regularly with, have knowledge of, and share expertise relating to the education of students with and without disabilities. The education team members collaboratively make decisions about assessment, curriculum content, instructional strategies, and accommodations/modifications for all students served by the team. The education team includes general and special education teachers. When appropriate, the education team also may include other members of students' IEP teams (e.g., students, parents/family members, paraeducators, a psychologist, related service providers, a speech/language therapist, an administrator, a vision/hearing specialist, transition personnel, community service providers) and/or other members of natural support networks for students with and without disabilities (Anthun & Manger, 2006)

Formalized Classwide Peer Supports

Specific Peer Support training that systematically trains all of the peers in the classroom to effectively implement strategies that lead to successful inclusive experiences for students with disabilities included in that classroom. (Heron, Welsch & Goddard, 2003).

General Education and Natural Contexts

Instruction addresses the established curriculum of academic subjects offered in essentially the same fashion for all students. Natural contexts are those in which an activity typically occurs (e.g., learning to button in physical education, practicing math skills in the cafeteria) (Ryndak & Fischer, 2003)

Inclusive Education

Students with disabilities are supported in chronologically age-appropriate general education classes in their home schools (or school of choice) and receive the specialized instruction described by their IEPs within the context of the core curriculum and general class activities. (Halvorsen & Neary, 2001).

Individualized Education Plan (IEP)

IDEIA, 2004 mandates that each child who receives special education services must have an individualized education plan. The IEP is the plan agreed upon by the school administrator, teacher, parents, and other relevant professionals. (Vermont Department of Education, Special Education Evaluation & IEP Forms for 2007)

Individual Education Team

Persons who share responsibility for the education of a student with disabilities including assessment, identifying academic and non-academic curriculum content, implementation and evaluation. The IEP team includes: the student, parent(s)/family member(s), and general and special education teachers. (Vermont Department of Education, Special Education Evaluation & IEP Forms, 2007)

Initiated Peer Interaction

Any motor or vocal behavior directed to a peer that attempts to elicit a social response. (Kamps, Potucek, Lopez, Kravits, Kemmerer, 1997).

Instructional Activities

Activities designed to facilitate the transmission, internalization and application of knowledge and/or skills (Vermont Department of Education, Programs and Services)

Least Restrictive Environment

Students with disabilities are served with children without disabilities to the maximum extent appropriate, and are only removed from regular education environments when the severity of the disability interferes with satisfactory participation (Individuals with Disabilities Education Improvement Act of 2004).

Meaningful Participation

Students with disabilities participate in activities with their same-age peers without disabilities which are meaningful for the student now and in the future. The students are actively engaged in learning, and activities and materials are age-appropriate with accommodations and modifications provided as needed (Florida Department of Education, 2007).

Modifications

Changes to the requirements of a course or the standards a student must meet. A change in *what* a student is taught or tested on. This change is based on student's needs as identified by the IEP team. (Vermont Department of Education: Programs and Services: Educational Support Teams)

Naturally Occurring Activities

Events that occur within the normal flow of a student's daily life (Ryndak, Clark, Conroy, & Stuart, 2000)

Natural Supports

Supports provided to a student with a disability from teachers and other support personnel, such as mentoring, friendship, socializing, providing feedback on performance or learning a new skill together. (McGregor & Vogelsberg, 1998).

Occupational Therapy

Refers to the use of meaningful occupation to assist people who have difficulty in achieving healthy and balanced life and to enable an inclusive school environment so that all students can participate to their potential in daily occupations of life (IDEIA, 2004)

Occurrence of Initiated and Reciprocal Interactions

The number of intervals observed when either an initiated or reciprocal interaction is demonstrated by the student with significant disabilities. (Kazdin, 1982).

Operational Definition of the Problem

An operational definition defines the precise manner in which a variable is measured. It is a clear, concise detailed definition of a measure needed when data are collected through observation and should be developed and tested before the data collection begins. Identifying the steps used in defining each variable allows others to evaluate and potentially replicate the research study. The success or failure of a research project often depends on how well the variables are operationalized (Borg & Gall, 1983).

Reciprocal Interactions

Any response to an initiation, regardless of the form of the response. Reciprocal interactions can be appropriate or inappropriate responses. For example, if a student with significant disabilities is asked to underline his name and does so, an acknowledgement of the reciprocal interaction would be documented. Additionally, if a peer without disabilities greets the student with significant disabilities and his response is to kick that peer, a reciprocal response is acknowledged (Carta, Sainato, & Greenwood, 1988)

Research-Based Practices

Research that applies rigorous, systematic and objective procedures to obtain valid knowledge relevant to education. (IDEIA, 2004)

Significant Disabilities

Extensive mental, physical, and/or behavioral impairment or a combination of multiple impairments likely to be permanent in nature and significantly compromising a student's ability to learn, function independently in the community, perform self-care, and obtain employment (Downing, 2005).

Socialization

Shaping of individual characteristics and behavior through the stimuli and reinforcements that the social environment provides. (Sandler, 1999).

Social Perception

The ability to interpret stimuli in the social environment and appropriately relate such interpretations to the social situation. (Castañeto & Willemsen, 2007)

Supports

Resources and services provided to students with disabilities to maximize their access of and participation in the general education classroom and other settings (Janney & Snell, 1997)

Students with Significant Disabilities, TASH

Students with significant disabilities are those who traditionally have extensive mental, physical, and/or behavioral impairments or a combination of multiple impairments likely to be permanent in nature and significantly compromising a student's ability to learn, function independently in the community, perform self-care, and obtain employment. The term "significant disabilities" has emerged from an ongoing dialogue among professionals, family members, and self advocates and as with any other group of people, has changed over time and is likely to continue to be refined (Kennedy & Horn, 2004). Students with significant disabilities require ongoing, extensive support in order to participate in integrated school settings and can enjoy the quality of life available to students with fewer or no disabilities (Kennedy & Horn, 2004; National Dissemination Center for Children with Disabilities, 2004).

Children with significant disabilities often have concurrent motoric, cognitive, medical, sensory, and behavioral issues. TASH, formerly the Association for Persons with Severe Handicaps, proposes a definition of significant disabilities that emphasizes the need for extensive ongoing support in inclusive settings across the life span of the individual. TASH is an international membership association leading the way to inclusive communities through research, education, and advocacy. TASH members are people with disabilities, family members, fellow citizens, advocates, and professionals working together to create change and build

capacity so that all people, no matter their perceived level of disability, are included in all aspects of society. According to TASH, people with significant disabilities:

> "include individuals with disabilities of all ages, races, creeds, national origins, genders and sexual orientation that require ongoing support in one or more major life activities in order to participate in an integrated community and enjoy a quality of life similar to that available to all citizens. Support may be required for life activities such as mobility, communication, self-care, and learning as necessary for community living, employment, and self-sufficiency" (TASH, 2000).

TASH supports a vision of high expectations for all students and a commitment to a set of learning goals or standards that are strong, clear, understood, and put into practice. TASH values and supports diversity, and recognizes both the legal right to and the reciprocal benefits of inclusive education. Inclusion, the word used to define the outcome of quality education whereby a child with disabilities receives individualized services and supports in the school they would attend if they did not have a disability, remains a core issue with TASH. The organization believes that true inclusive schooling can only be achieved in the general education classroom with same age peers without disabilities, but it cannot be achieved by placement alone.

TASH members have demonstrated through research and practice that inclusive education can work for all children, including those who have been labeled with the most significant disabilities.

Impact on the Field; Extension of Previous Research

Peer support interventions have emerged as an effective alternative to traditional paraprofessional models for supporting students with significant disabilities (Carter & Hughes,

2005; Carter & Kennedy, 2006). Peer support interventions can: (a) contribute to higher levels of active engagement for students with and without disabilities (Shukla, Kennedy, & Cushing, 1998, 1999), (b) increase social interactions (Kennedy, Cushing, & Itkonen, 2004), (c) decrease levels of problem behavior of students with significant disabilities (McDonnell Mathot-Buckner, Thorson, & Fister, 2001), (d) improve academic performance (McDonnell, Thorson, Disher, Mathot-Buckner, Mendel, & Ray, 2003) and (e) allow for the acquisition, generalization, and maintenance of functional skills for students with significant disabilities (McDonnell, 1998; Burcroff, Radogna, & Wright, 2003). The majority of peer support studies have focused on the effectiveness of one-to-one peer supports (Goldstein, Kaczmarek & English, 2002; Ryndak & Fisher, 2003) while far fewer studies (Carter, Cushing, Clark, & Kennedy, 2005; Kennedy, 2001; Martella, Marchand-Martella, Young, & Macfarlane, 1995) have examined academic and social outcomes of students with significant disabilities supported by two or more peers. The limited, but encouraging, findings of these latter studies indicate that intentional changes in the configuration of peer support arrangements may differentially impact student outcomes, with higher levels of acceptance, social interaction, and contact with the general curriculum observed when students with significant disabilities are supported by two or more peers (Carter, Cushing, Clark, & Kennedy, 2005)

This research study analyzed data on the occurrence and type of peer interactions of students with significant disabilities both prior to, and following, the provision of peer support training to two entire classes of students without disabilities. The peer support training emphasized the implementation of best practices for peers supporting students with significant disabilities in general education contexts. When every student in the classroom is more capable

of providing natural supports for a student with significant disabilities, that increased support would predictably increase the overall opportunities for social and academic engagement and the occurrence of peer interactions of those students with significant disabilities. Additionally, the numerous peers available to the support arrangement in the classroom could increase the amount of systematic instruction, instructional and social feedback, and response opportunities the student with significant disabilities receive, thereby facilitating increased contact with the peers in the class and with the general physical education curriculum.

As students enter adolescence, the complexity of peer interaction further intensifies, requiring them to perform skills related to establishing and sustaining close relationships, adjusting to the communication needs of others, using inferential and figurative language, and monitoring their own social behavior. Additionally, some students have such significant disabilities that they may also exhibit speech and communication impairments, lack sufficient training in augmentative or alternative communication system use, or engage in challenging behavior. All of these limitations have the potential to impact students socially. These skill limitations highlight the importance of delivering skill-related instruction to the classmates of students with significant disabilities as a means to further promote peer interactions.

Limitations of the Study

The results if this study must be interpreted in light of several potential limitations. The small number of students participating in the study ($N = 4$) limits the generalizations that can be made about the effects of the classwide peer support training on other students with significant disabilities. Although extensive observations of the students with significant disabilities and their general education peers were conducted (i.e., more than 10 hours per student), the relatively

small sample size of students with significant disabilities may constrain the degree to which differences related to the initiated or reciprocal peer interactions could be generalized beyond the four primary participants.

A second limitation may be that the faculty and administration in the school in which the study took place had previously made a significant programmatic and philosophical commitment toward improving and expanding opportunities for students with significant disabilities to be educated in more inclusive contexts. As a result, it may be difficult to determine what effects, if any, this prior commitment may eventually have had on the study.

Third, although a broad range of variables were examined, additional variables that may influence peer interaction were not a part of this research study. For example, instructional formats (Carter, Cushing, Clark, & Kennedy,2005; Piercy, Wilton, & Townsend, 2002), roles assigned to individual students (Hughes, Rung, Wehmeyer, Agran., Copeland, & Hwang, 2000), and, in particular, teacher/paraprofessional behaviors (Logan & Malone, 1998) and sufficient levels of training potentially may impact the occurrence and type of interactions exhibited by students with significant disabilities. In addition, variables such as certain students being absent from the support environment, substitute teachers with different supervision styles, the structures of certain activities in which the students participated (kickball, volleyball, wiffle ball), and the consistency of support strategies employed by paraprofessionals must also be considered. In-depth discussion on these last four variables will occur in Chapter Five.

Fourth, the occurrence and type of interactions in this study were determined by observers rather than by interviewing or surveying the primary and secondary student participants. Further research should look to incorporate the perspectives of students with and

without significant disabilities into future evaluations of the impact of peer support strategies. The thirty-seven students who participated in the peer support training and provided supports within the physical education classrooms and the four students with significant disabilities would, no doubt, add valuable feedback and input to the study and its impact on the success of future support interventions. Information on such follow-up studies may provide additional insight into the interactions students find reinforcing and meaningful.

Additionally, the class setting may have been a limitation to the study if the environment chosen had not offered sufficient opportunities for students to naturally communicate in ways that would facilitate interactions between students with and without significant disabilities. The study, however, controlled for this by identifying two classes facilitated by a physical education teacher who utilized small group instruction and cooperative group work, and incorporated much movement within the classroom allowing for sufficient opportunities for peers to interact naturally. Even in controlling for this, there were a few instances during the study where the environment changed due to unanticipated changes in personnel and activities, leading to less interaction opportunities for students.

Fifth, the study occurred in two physical education classrooms taught by the same teacher, which limited the possibility of individual practices provided by different teachers which might ultimately impact the study results. With only three teachers actively involved in the study (the physical education teacher and two special education teachers) and responding to a teacher satisfaction survey, there was less of a variety of teacher responses than there would have been if each student was observed in a general education core classroom taught by four different general education teachers and supported by special education teachers.

A final limitation to this study would be the limitations associated with AB research design. Those limitations will be discussed in depth in Chapter Three.

Summary

Educators and parents continue to be concerned that many students with significant disabilities struggle throughout their school years with developing and maintaining meaningful friendships, particularly in secondary school settings where adolescents are vulnerable to the frustrations of having few or no friends (Hunt & Goetz, 1997). Facilitating a study in which an entire classroom of peers was trained to provide academic, social, physical, and communication supports to students with significant disabilities could , eventually, contribute much to addressing this concern, not only at the small, rural high school in which the study was conducted but throughout the state as well. At one time, Vermont schools were considered some of the most inclusive schools in the country but recent data from the U.S. Department of Education suggests that the proportion of students spending at least 80 percent of their school day included with their peers without disabilities in general education classrooms has decreased in Vermont over the past few years (U.S. Department of Education, 2006).

This study at a small, rural high school could positively impact many other schools in the state. Collaborative relationships have been developed by the researcher with principals, curriculum coordinators, and special education directors around the state and the anticipated successes of the research study could contribute to philosophical and programmatic shifts of Vermont's school leaders as they look to improve outcomes for all of the students on their campuses.

Support for the research study came from a number of different constituents at the school in which the study took place. The school principal expressed excitement about the prospects of including these students in general education classrooms in meaningful ways. Many teachers expressed support for the training and asked for it to be recreated as teacher training rather than training intended to support high school peers.

CHAPTER TWO: LITERATURE REVIEW

Introduction

A review of the research and professional literature relative to this research study was conducted. Chapter Two begins with an overview of single subject research and the variables that typically lead to more inclusive placements for students with significant disabilities, including legislative and policy decisions leading to shifts in service delivery models and increased opportunities for inclusive placements for students with significant disabilities. The chapter then examines the effects of inclusive placements of students with significant disabilities on the academic growth of students without disabilities. Strategies specific to the inclusion of students with significant disabilities in physical education classrooms are then examined. Finally, the chapter concludes with a discussion of the relevant historical perspectives of inclusion, a definition of students with significant disabilities, and best practices to address the barriers that lead to students with significant disabilities not having the same educational opportunities as their same-age peers.

Single Subject Research

Single subject research is experimental rather than descriptive. The purpose of single subject research is to document causal, or functional, relationships between independent and dependent variables. Single subject research is a rigorous, scientific methodology used to define basic principles of behavior and establish evidence-based practices (Rossman & Rallis, 2003). There is an extensive and productive history of single subject research that has provided useful information for the field of special education (Kennedy, 2004b; Wolery & Dunlap, 2001). Since

the methodology was first initiated (Sidman, 1960), single subject research has proven particularly useful in defining educational practices at the level of the individual learner. For example, reinforcement therapy has emerged from single subject techniques, with operant principles of behavior empirically demonstrated and consistently replicated through this method. In addition, procedures emerging from single subject research have been found in other areas such as social-learning theory, medicine, social psychology, social work, and communication.

Educators identifying individualized educational and support plans have benefited from the systematic form of experimental analysis that single subject research permits (Dunlap & Kern, 1997; Geertz, 1973). Single subject research methods have provided a level of experimental rigor well beyond that found in traditional case studies (Shavelson & Towne, 2002) that can be used to then establish evidence-based practices. This level of rigor is essential in determining whether the intervention provided will actually reinforce peer supports as a best practice in supporting students with significant disabilities in inclusive contexts.

Single subject research designs were used to examine the effects of peer support training on the frequency of interactions of students with significant disabilities supported by their trained peers without disabilities in applied settings (Nourbakhsh. & Ottenbacher, 1994). Given the rigorous, scientific methodology used to define basic principles of behavior and establish evidence-based practices facilitated by single subject research and its ability to define educational practices at the level of the individual learner, the use of this strategy seemed most appropriate for this research study.

An important responsibility of researchers is the documentation of student behaviors relative to the application of the intervention, in this case; the introduction of peer support

training. Observational recording procedures used with single subject research designs can be useful in evaluating interventions designed to enhance the functioning of students with significant disabilities. By following recommended protocols for data collection associated with single subject research designs that promote systematic evaluation, researchers can improve their ability to document outcomes. The data collection tool was designed with this in mind.

Variables Leading to More Inclusive Placements

Legislation

The Individuals with Disabilities Education Improvement Act (IDEIA, 2004) mandates that students with disabilities: (a) have access to the general education curriculum; and (b) participate in state and district assessments or alternate assessment when necessary. Schwarz (2007) reminds educators that special education is a service not a sentence and to fulfill the requirements of education mandates, schools must assume that students with disabilities belong in the general education classroom with appropriate supports and students should never have to earn their way into a general education environment. Recent legislative and policy initiatives (Individuals with Disabilities Education Improvement Act, 2004; No Child Left Behind, 2002) have shifted the contexts within which students with disabilities, including students with significant disabilities, spend their school day (National Council on Disability, 2004; President's Commission on Excellence in Special Education, 2002), as well as the curricular standards on which students are expected to receive instruction (Browder, 2001; Browder & Cooper-Duffy, 2003; Browder, Spooner, & Bingham, 2003).

The Individuals with Disabilities Educational Improvement Act (IDEIA, 2004) and the No Child Left Behind (NCLB, 2002) Act require schools to ensure that students with disabilities,

including students with significant disabilities, have access to the same general education curriculum as their peers without disabilities. This requirement is challenging educators to think differently about the location in which students with disabilities spend their school day and the academic focus of their educational programming. The emphasis on holding high expectations for student achievement and performance and providing instruction on a more rigorous, relevant, and meaningful curriculum is intended to increase academic learning and progress for students with disabilities (Giangreco, 2006; Ryndak & Fisher, 2003). As a result, general education contexts have become the place where increasing numbers of students with disabilities are educated (Kennedy & Horn, 2004).

Access to General Education Curriculum

Browder, Spooner, and Bingham (2003) described how individual states have ensured the participation of students with disabilities in instruction on state standards, as well as state and district assessments, or alternate assessment when appropriate. Ryndak and Billingsley (2004) state that, for students with significant disabilities, access to general education must extend beyond content reflected in state standards and state and district assessments. Access to general education with accommodations and modifications must encompass instructional and non-instructional activities, as well as the settings in which general education students of the same age are engaged.

Effective Strategies for Developing, Implementing, and Evaluating Services

Another variable accounting for the increase of inclusive opportunities for students with disabilities is research on effective strategies for developing (Giangreco, 2006; Harry, Grenot-Scheyer, Smith-Lewis, Park, Xin, & Schwartz, 1995), implementing (Janney & Snell, 2000), and

evaluating (Browder, 2001) educational services. Education professionals increasingly focus on identifying programs, practices, and strategies that are research-based. To be considered research-based, an educational practice must have evidence that is (a) supported by rigorous and scientific data and (b) has a body of studies that demonstrate positive outcomes. The No Child Left Behind (NCLB, 2002) Act and many federal grant programs call on educators to use research-based practices to inform their decisions about educational interventions.

Additionally, research-based programs should be objective, empirical, replicable, have valid and reliable data, use accepted research designs, and use rigorous data analysis to determine effectiveness (Slavin & Fashola, 1998). Increasing exposure to research-based instructional methods and practices, materials and media, and supports and accommodations will help students with disabilities effectively engage in learning general education curriculum content. To determine whether a practice is research-based, practitioners must examine the types of challenges the particular strategy targets, specific information regarding the use of the strategy, how effective implementation can improve access to the general education curriculum for students with disabilities, sources of findings on the practice, considerations for implementation, costs, and should provide additional websites and resources for more information about the practice (U.S. Department of Education, 2006)

The No Child Left Behind Act (2002) defines programs that are research-based as involving the application of rigorous, systematic, and objective procedures to obtain reliable and valid knowledge relevant to education programs. Research-based programs produce reliable data measured consistently using strong measures, have accurate data that measure what it was intended to measure, involve rigorous data analyses, and have been accepted by a rigorous peer-

review or approved by a panel of independent experts that apply strict standards of scholarship to the work they review (NCLB, 2002).

Research on the Outcomes of Educational Services in Inclusive Contexts

An additional variable that supports the increase of services in inclusive settings for students with disabilities is research that addresses the effect, or outcomes, of those educational services for students with disabilities and for their general education classmates. This body of research has addressed key issues and yielded important findings. Services in inclusive settings for students with significant disabilities have been effective in increasing social interactions (Cushing & Kennedy, 2003; Peterson & Hittie, 2003; Sáenz, Fuchs & Fuchs, 2005; Ryndak & Billingsley, 2004), facilitating the acquisition of general education content (Smith, 2003) and literacy (Fuchs & Fuchs, 2005), and supporting appropriate and acceptable behaviors (Sugai, Horner, Dunlap, Heineman, Lewis, Nelson, Scott, Liaupsin, Sailor, Turnbull, 2004). Research also is beginning to document long-term positive effects of inclusive education for students with significant disabilities, including changes in behavior (Browder & Cooper-Duffy, 2003; Fisher & Meyer, 2002) and overall quality of adult life as indicated by supported living, supported work, and social relationships (National Institute on Disability Rehabilitation Research, 2007). This last positive effect of inclusive education is one that all educators and researchers strive for, the long-term impact that inclusion can have for students with significant disabilities after graduation.

A major impetus for placing students with disabilities in general education classrooms is to allow them to reap the social and academic benefits afforded their peers without disabilities (Cullinan, Sabornie, & Crossland, 1992; Ferguson & Asch, 1989; Johnson & Johnson, 1991; Madden & Slavin, 1983; Wehman, 1990). Being afforded the opportunity to learn from, and

support, one another in inclusive environments enriches the lives of all students (Vandercook, Fleetham, Sinclair, & Tetlie, 1998).

Inclusion in general physical education contexts, indeed in all general education contexts, should be considered and determined on an individual basis so that the child with a disability can achieve the goals and objectives identified on the Individual Education Plan (IEP), participate and demonstrate learning in the general education environment, and demonstrate competency in state and district-wide physical fitness or skills assessment or alternative tests to match the child's unique needs.

Impact on Students without Disabilities

The inclusion of students with disabilities into general education contexts, including general physical education classes, is happening more and more in public school settings (Block, 1995; DePauw & Doll-Tepper, 2000). The impact of inclusion on students without disabilities is often overlooked. Many educators emphasize potentially positive impacts without investigating the possible negative effects inclusion may have on overall general education programs, including physical education classrooms (Block & Zeman, 1996; LaMaster, Gall, Kinchin, & Siedentop, 1998).

A number of studies have found that services in inclusive settings have not had an adverse effect on the academic growth of general education students in the inclusive classes and have not resulted in a decrease in instructional time for the general education students (Hollowood, Salisbury, Rainforth, & Palombaro, 1994). Salend and Duhaney, (1999) found that students without disabilities in inclusive settings receive numerous social benefits (e.g., understanding individual differences, recognizing the worth of classmates with disabilities, and

understanding the effect of their behaviors on their classmates with disabilities). Students without disabilities have developed mutually-satisfying friendships with classmates who have significant disabilities (Staub, Schwartz, Gallucci, & Peck, 1994).

In a case study presented by Farlow (1996), the peer assistant of an adolescent with Down syndrome was failing social studies but after tutoring the student with the disability, the peer's grades increased dramatically. When students with significant disabilities are included into general education contexts, a caring and accepting community of learners develops and student learning for peers without disabilities has improved (Logan, Diaz, Piperno, Rankin, McFarland, & Borganian, 1995; Staub & Peck, 1995). In another research study on the impact of peers supporting students with more significant disabilities, improved academic performance was reported for the students without disabilities (Cushing & Kennedy, 1997).

Obrusniková, Block and Kelly (2004) implemented a study to determine the impact of including a fourth-grade student with a neuromuscular disease in regular physical education on students without disabilities. The researchers found a significant increase of motor skill and cognitive learning and positive pre and post test attitudinal scores. Their overall findings suggest that inclusion of students with disabilities in general education classrooms, including physical education classrooms, does not adversely affect the participation and/or motor performance of students without disabilities.

Nationally, there are more than 5.5 million students with disabilities, and slightly under half of these students in elementary schools are served in general education settings with their general education peers for more than 79% of the school day (U.S. Department of Education, 2005). The number of students with disabilities who receive special education and related

services in inclusive settings has been increasing nationally (U.S. Department of Education, 2005), although there is significant variability across states (McLeskey & Waldron, 2002; McNulty, Connolly, & Wilson, & Brewer, 1996).

Students with Significant Disabilities Included in Physical Education Classes

According to the American Alliance for Health, Physical Education, Recreation and Dance (AAHPERD, 2008), the largest organization of professionals supporting and assisting those involved in physical education, leisure, fitness, dance, health promotion, and education and all specialties related to achieving a healthy lifestyle, students with significant disabilities must be included to the maximum extent possible in the general physical education programs in order to have an opportunity to learn and perform in the physical, cognitive, and social-emotional domains.

Students with disabilities must be actively engaged participants in meaningful learning experiences in the general physical education class, not just in physical proximity or space. Inclusion is not, then, a student with a significant disability playing catch with a paraprofessional while the rest of the class is engaged in a game of basketball. The most effective inclusive environments offer a variety of activities at differing levels of difficulty so all students can be meaningfully involved in learning (Randazzo & Corless, 1998). Ultimately, it is the school's responsibility to justify why the student cannot be educated in a general physical education setting. Decisions involving the inclusion of students with disabilities into the general physical education program must consider the safety of all students, including the students with disabilities (Lieberman & Houston-Wilson, 2002).

Families must be actively involved in the IEP team decision-making process related to the inclusion of their child in the general physical education program. Students with significant disabilities included in the general physical education program must receive regular evaluations of progress toward IEP goals. Supplementary aides and services, as well as other needed instructional supports, should be provided in the general physical education environment to students with significant disabilities or provided consultatively to the physical educator (Block, 2000). General physical educators should receive direct and/ or consultative services from qualified professionals in adapted physical education to support the inclusion of students with significant disabilities when needed. The extent to which these services and supports were available and observable in the two classrooms utilized in this study will be discussed in Chapter Five.

Barriers to Assuring Equal Educational Opportunities

Significant barriers remain, however, toward ensuring that students with significant disabilities have the same educational opportunities as their same-age peers. Students with significant disabilities often have limited opportunities for choice-making in valued and meaningful activities (Kennedy & Itkonen, 1994; Wehmeyer & Palmer, 2003), exhibit numerous communicative and social skill deficits (Kleinert, Garrett, Towles, Garrett, Nowak-Drabik, Waddell, & Kearns, 2002), and often participate in separate educational experiences, (e.g. publicly-funded special education schools, separate special education classrooms in local schools,) than their peers without disabilities (Jackson, Ryndak, & Billingsley, 2000).

In 1975, Congress passed Public Law 94-142 (Education of All Handicapped Children Act). In order to receive federal funds, states had to develop and implement policies that assured

a free appropriate public education (FAPE) to all children with disabilities. In the decade following the passage of P.L. 94-142, the special education teacher's roles and responsibilities related to students with significant disabilities were thought of exclusively in the contexts of self-contained settings (Singer, Billingsley, Goetz, & Falvey, 1997). General education was not considered a realistic option for students with significant disabilities. The promising practices literature during the mid 1970's describes an educational curriculum completely unrelated to what was happening in general education settings, a preference for self-contained classroom structure, design, and management, and a collection of educational practices focused on strategies like discrete trial instruction for individual and small groups of learners with similar disabilities (Striefel & Cadez, 1983). Even today, ensuring that students with significant disabilities benefit fully from the many learning and social opportunities available through access to the general curriculum remains an important challenge, particularly in middle and secondary school settings.

History of Education of Persons with Significant Disabilities

In the United States, individuals with significant disabilities are legally entitled to education and other support services but the extent to which this is happening varies greatly across the country. Students with significant disabilities are identified early in life by their noticeable delays in development or by their physical differences. Many require medical interventions not available until recently; thus, earlier in history (and still today in less-developed countries), many children with significant disabilities do not live long. Historically, in many cultures, the presence of significant physical differences at birth had been associated with stigma

and shame. Current technology and medical interventions have extended both the length and quality of life for persons with significant disabilities.

In an examination of trends related to the emergence of compulsory education in the United States, Richardson (1994) identified three distinct systems of educational services that can still be seen in our school systems today. These systems are (a) the special education support system, developed out of earlier systems for students identified as having sensory, physical, or mental disabilities often found in institutions (e.g. hospitals, residential facilities) or living at home; (b) the training or center schools and correctional service system which developed in the late 19th and early 20th centuries. This system was designed to educate and control students identified as truant and/or delinquent; and (c) the mandatory general education system for "regular" students; a combination of earlier educational systems developed mainly for the privileged as well as some in the working and middle classes. Throughout the years there were many attempts, historically, to merge these three systems (Lipsky & Gartner, 1997); however, current educational trends do not seem to support such a merger. Statistics show that more students with mild and moderate disabilities are experiencing educational services within general education classrooms (U.S. Department of Education, 2006), however, the continued expansion of the field of special education as a separate set of services and the continued emphasis on self-containing students, particularly those with behavior problems (Walker, Horner, Sugai, Bullis, Sprague, Bricker, & Kaufman, 1996) demonstrate a continuing widening gap between the three systems identified by Richardson.

Historically, students with significant disabilities received services mostly from the first of these three systems, with the preponderance of those students being supported within

institutional environments. Given the excessive levels of isolation, neglect, and abuse associated with institutional life (Blatt & Kaplan, 1966; Holburn, 1997; McCartney & Campbell, 1998), concerns emerged in the late 1900's related mostly to the impact of that isolation.

Many critical issues related to the success of students with significant disabilities have emerged out of concerns that have arisen related to the provision of services. These concerns can be grouped into three broad categories. The first set of concerns are those associated with access; the degree to which students with significant disabilities are offered meaningful opportunities to participate in the events, activities, and life styles of their school and of their age- and grade-level peers. The second set of concerns are those associated with equity; the degree to which the magnitude and content of the educational experiences provided to students with significant disabilities are equivalent to those offered to students without disabilities. Third, there are concerns for quality; the degree to which the identified educational ends are optimized through the identification and use of promising and/or proven instructional strategies, technologies, and interventions (Slavin, 2002).

Educational equity and quality issues arose after the implementation of reforms designed to increase access to choices that others without disabilities in society were readily able to make. The development of educational services, for instance, for students with significant disabilities during the 1960's and 1970's was driven, in large part, by the deinstitutionalization movement (Larson, 1976). After issues and concerns related to this population were presented in the courts as due process issues, court decisions emphasized that establishing restrictive environments for students with disabilities must serve a demonstrated educational function if individuals are to be placed in such environments, and that the eventual return to the general education environment

should be the ultimate end goal as support teams make subsequent educational and placement decisions. The court decisions eventually led to the closing of state institutions and the development of community living alternatives (Lakin, Anderson, Prouty, & Sandlin, 1998). In addition, the deinstitutionalization movement also increased equity issues by providing educational services to students with significant disabilities and quality issues by looking to determine whether the level of educational supports being provided resulted in observable, increased learning and educational growth.

The focus on programming and supports briefly shifted from access to quality with the passage of Public Law 94-142 in 1975, which mandated a free, appropriate, public education for all children and youth with disabilities. In the 1970's, a sense of high expectation emerged among educators and families as the promises of PL 94-142 combined with the ongoing trends in deinstitutionalization created greater educational opportunity and more life choices, particularly for students with more significant disabilities. Educational decisions during this time focused on such issues as whether children with significant disabilities should be educated using proven developmental or behavioral/remedial techniques (Guess, Sailor, & Baer, 1977) and the importance of using functional outcomes to guide the development of measurable educational goals and objectives identified by educational support teams (Brown, Nietupski, & Hamre-Nietupski, 1976). Additional studies document a considerable amount of research reflecting the desire to improve and refine *how* the needs of students with significant disabilities are defined and *how* instruction should be delivered for optimum learning (Horner, Dunlap, & Koegel, 1988). This was a major change in focus to previous support efforts.

During this shift in focus, there were still less than acceptable educational outcomes for students with significant disabilities. There was, however, a greater understanding, particularly by parents, of how access issues and equity and quality issues were inter-related. For example, the concept of transition (McDonnell & Hardman, 1985) emerged with the growing awareness among families, guardians, and professionals that effective instruction, no matter how frequent or intense, could not ensure meaningful access to, or readiness to participate in, the community at-large upon graduation from high school. Later, the inclusive education movement of the 1990's arose as research tended to establish that educational benefits in an integrated setting outweighed the benefits presumably associated with segregated and center school placements. By the 1990's, the major professional and advocacy organization for persons with significant disabilities (The Association for Persons with Severe Handicaps, or TASH) had established policy statements on respectful language and inclusive education as the most viable and effective option and the only ethical educational option for students with significant disabilities.

The adoption of inclusive educational practices in which students with significant disabilities are respected, full-time members of general education classrooms and provided the appropriate supports, modifications, and services necessary to learn by schools across the country remains slow and inconsistent (Carter & Hughes, 2006). The majority of students with significant disabilities still spend a limited amount of their school day in general education contexts. Specifically, 72% of students with multiple disabilities, 58% of students with mental retardation, and 60% of students with autism spend the majority (i.e., 60% of more) of their school day outside the general education classroom (U.S. Department of Education, 2006). These educational placement patterns have not experienced a dramatic shift over the years

(Katsiyannis, Zhang, & Archwamety, 2002). Moreover, students with significant disabilities participate at diminished rates in extracurricular activities (Wagner, Cadwallader, & Marder, 2003) and often remain isolated from their general education peers in non-instructional school settings (Carter, Hughes, Guth, & Copeland, 2005). At the secondary level, the participation of students with significant disabilities in general education classes becomes increasingly restricted (U.S. Department of Education, 2006). Relative to elementary settings, students with significant disabilities spend substantially more time outside the general education classroom in high school settings. Placements in separate class and schools decrease opportunities for peer interactions (Kleinert, Miracle, & Sheppard-Jones, 2007). Within the general education setting where inclusive opportunities are occurring, a strategy to be considered to facilitate those opportunities is the use of classwide peer supports.

Even today, students labeled as having significant disabilities may appear to have such challenging impairments, and their needs appear to be either so basic (e.g. simple communication skills; appropriate manipulation skills; learning to sit) or so complex (e.g. requiring nursing intervention, G-tubes,) that teaching these students in highly academic, typical classrooms seems improbable, and at the least, impractical. Yet research and best practice shows that students with more significant disabilities learn more with the almost constant stimulation and numerous and spontaneous opportunities to interact with peers in the general education environment (Jackson, Ryndak, & Billingsley, 2000). Special educators, no matter how highly motivated or skilled, cannot provide the necessary ongoing stimulation in self-contained classrooms (Downing, 2002).

Effective Programming for Students with Significant Disabilities

In order to be effective, educational programs must incorporate a variety of components to meet the considerable needs of individuals with significant disabilities. Programs should assess needs in four major areas: domestic, leisure/recreational, community, and vocational. These assessments enable support teams to identify functional objectives, those that will result in the learner's increased skill and independence in dealing with the routine activities of his/her life. According to the National Dissemination Center for Children with Disabilities (NDCCD, 2004), instruction should include expression of choice, communication, functional skill development, and age-appropriate social skills training.

Related services are of great importance for students with significant disabilities, and a multidisciplinary approach to instruction is crucial. Speech and language therapists, physical and occupational therapists, and medical specialists must work closely with classroom teachers and parents. To better insure skill generalization, related services are best offered during the natural routine in the school and community rather than removing a student from class for isolated therapy in more segregated settings.

Classroom arrangements must take into consideration students' needs for medications, special diets, or special equipment (NDCCD, 2004). Adaptive aids and equipment enable students to increase their range of functioning. For example, in recent years, computers have become effective communication devices. Other aids include: wheelchairs, typewriters, head sticks, head gear, clamps, modified handles on cups and silverware, and communication boards. Computerized communication equipment and specially built vocational equipment also play important roles in adapting working environments for people with serious movement limitations.

Finally, integration with peers without disabilities is another important component of the educational setting. Attending the same neighborhood school and participating in the same activities as their peers without disabilities are crucial to the development of social skills and friendships for students with significant disabilities.

Inclusive Practices in Vermont

In the state of Vermont, the most recent statewide data on inclusive practices is still impressive compared to other states although the percentage of time spent in inclusive classrooms by students with disabilities varies greatly across the state (Vermont Department of Education, 2007). Statewide, 71% of the students with disabilities spend less than 21% of their school day separate from their peers without disabilities. 19% of students with disabilities spend between 21% and 60% of their day in separate settings, while 10% spend more than 60% of their day educated separate from their peers (IDEAdata.org, 2006). In the secondary school in which data were collected for this research study, 86 % of students with disabilities spend less than 21% of their school day in an educational environment separate from their peers without disabilities and 7% currently spend between 21% and 60% of their day in separate settings. Seven percent of the students spend more than 60% of their school day in settings without their peers without disabilities, including all four of the primary participants in the study.

The Vermont Department of Education Annual Performance Report for 2005-2006 shows the state graduation rate for students without disabilities was 90.6% while the graduation rate for students with disabilities was 78.5%. At the secondary school where this study took place, the graduation rate for students without disabilities is 92% while students identified with a disability

graduate at a 76.4% rate. Overall, 14.16% of the students in the state have been identified as having a disability while 14.18% of the students in the target school have a disability.

Peer Supports

Overreliance on Paraprofessionals

The intensive support needs of students with significant disabilities (American Association on Intellectual and Developmental Disabilities, 2006; Kennedy & Horn, 2004), combined with the increased challenges to inclusion associated with middle and secondary school environments (Fox & Ysseldyke, 1997; York & Tundidor, 1995), have led researchers and educators to identify and evaluate effective support models for ensuring that students with significant disabilities access and progress within the general curriculum. Historically, paraprofessionals have been used most often by schools to support the needs of students with significant disabilities in general education classrooms (Giangreco, Yuan, McKenzie, Cameron, & Fialka, 2005).

This heavy reliance on paraprofessionals, however, has raised concerns and issues among researchers, educators, and parents about the roles that each support staff plays in inclusive settings (French & Chopra, 1999; Giangreco & Doyle, 2002; Mueller, 2002). Specifically, overreliance on paraprofessionals may (a) limit students' social interactions with their peers (Hemmingsson, Borell, & Gustavsson, 2003; Marks, Schrader, & Levine, 1999), (b) inhibit student achievement (Gerber, Finn, Achilles, Boyd-Zaharias, 2001), (c) stigmatize (Broer, Doyle, & Giangreco, 2004), (d) prolong unnecessary dependence on adults (Giangreco, Edelman, Luiselli, & MacFarland, 1997), and (e) decrease contact between students with disabilities and the general education teachers (Giangreco, Broer, & Edelman, 2001). These

unintended consequences have led researchers to advocate for alternative support models for students with significant disabilities that will eliminate the challenges associated with an overreliance on paraprofessionals (Cushing, Clark, Carter, & Kennedy, 2003; Giangreco, Halvorsen, Doyle, & Broer, 2004). One such model utilizes peers to support students with significant disabilities. The intervention planned for this school addressed this issue head on as three of the four students with significant disabilities involved in the study had a one-to-one instructional assistant assigned to them through the Individual Education Plan process.

Peers as an Alternative

The use of peers could reduce the dependency on paraprofessionals often used to provide supports to students with significant disabilities in inclusive settings (Giangreco, Edelman, & Broer, 2001; Giangreco, Halvorsen, Doyle, & Broer, 2004; Giangreco, Yuan, McKenzie, Cameron, & Fialka, 2005). Peers provide more natural supports, increase social interactions and communication skills, and maintain or enhance students' academic engagement.

Hughes, Fowler, Copeland, Agran, Wehmeyer, & Church-Pupke (2004) investigated the effects of an intervention package to support five high school students with extensive support-needs to initiate and engage in recreational activities with general education peers in their physical education classes. The intervention components were (a) assessing participants' recreational activity goals, (b) teaching self-prompting using a picture book, (c) programming common stimuli, and (d) asking participants to assess daily performance and evaluate daily goal achievement. The intervention was associated with increases in participants' initiation of, and engagement in, recreational activities with general education peers, as well as increases in ratings of quality of interaction.

Peer support programs create alternative teaching arrangements in which students act as instructional agents for one another (Harper, Maheady, & Mallete, 1994). The potential advantages of peer support programs are that they create a structure that allows the teacher to tailor instruction to the needs of individual students and provide a higher number of instructional trials in one-on-one or small group teaching formats (Kennedy, Cushing & Itkonen, 2004).

Support for the use of many peer support strategies comes from research studies with students with mild disabilities enrolled in general education classes (Lipsky & Gartner, 1997) and from studies in separate special education classes for students with significant disabilities (McDonnell, 1998). Research studies have repeatedly demonstrated that students without disabilities can be effective in teaching a variety of academic and developmental skills to this group of students (Carr & Darcy, 1990; Kunc, 2000). Unfortunately, there are fewer studies examining the effectiveness of these strategies in meeting the educational needs of students with significant disabilities in general education contexts (Hunt & Goetz, 1997, McDonnell, 1998, McGregor & Vogelsberg, 1998.)

Typical peer support interventions involve one or more peers without disabilities providing academic, behavioral, and social support to a student with disabilities (Cushing & Kennedy, 2004; Goldstein, Kaczmarek, & English, 2002). Peers are taught to: (a) accommodate and modify class activities to facilitate meaningful student participation, (b) provide instruction related to the student's IEP goals, objectives, and/or benchmarks, (c) implement behavior intervention plans and provide more informal behavioral supports, (d) provide frequent feedback to the student with disabilities on behavioral choices, academic skill development, and social interactions, and (e) promote communication between the student with disabilities and others in

the environment (Cushing & Kennedy, 1997; Kennedy & Fisher, 2001). The effectiveness of peer support interventions has been documented across grade levels and disability categories (Kennedy, 2004a).

While providing assistance to their classmates with disabilities, peers receive ongoing monitoring, feedback, and assistance from special education and general education personnel. Research indicates that peer support interventions contribute to higher levels of active engagement for students with and without disabilities (Shukla, Kennedy, & Cushing, 1998, 1999), increase social interactions (Kennedy, Cushing, & Itkonen, 2004), decrease levels of problem behavior for students with disabilities (McDonnell, Mathot-Buckner, Thorson, & Fister, 2001), improve academic performance (Dugan, Kamps, Leonard, Watkins, Rheinberger, & Stackhaus, 1995), and allow for the acquisition of functional skills (Werts, Caldwell, & Wolery, 1996).

It has been well documented that peer support interventions improve the academic engagement and social interactions of participating students (Carter & Hughes, 2005; Cushing & Kennedy, 1997; Shukla, Kennedy, & Cushing, 1999). Intervention effectiveness, however, is only one variable educators consider when deciding whether to implement educational strategies in their classrooms (Kennedy, 2002). Interventions must also be feasible to implement and must align well with the current instructional practices of the school and districts (Greenwood & Abbott, 2001; Klingner, Ahwee, Pilonieta, & Menendez, 2003). Peer support strategies appear to constitute an acceptable and practical intervention approach within inclusive secondary classrooms (Carter, & Pekso, 2007). The widespread adoption of peer support programs attests to their acceptability among educators. For example, approximately 40% of youth with disabilities

attend schools that offer some type of peer support program (Wagner, Newman, Cameto, Levine, & Marder, 2003).

This body of research related to the effectiveness of the use of peer supports for students with significant disabilities has predominantly reflected the viewpoints of teachers (Copeland, McCall, Williams, Guth, Carter, & Fowler, 2002), administrators (Villa, Thousand, Meyers, & Nevin, 1996), researchers (Jackson, Ryndak, & Billingsley, 2000), and parents (Palmer, Fuller, Arora, & Nelson, 2001). Carter and Hughes (2005) acknowledge the importance of accessing peers during adolescence. The general curriculum provides a natural context for peer interactions as students work collaboratively on shared learning tasks, a meaningful context for acquiring appropriate social related skills, accessing social supports, meeting additional classmates, and developing new friendships. The use of peer supports: (a) increases the number of people implementing curricular adaptations, and (b) ensures the relevance of activities and materials to ongoing classroom instruction. Peers are able to recognize when a student's instructional activities are not aligned with their own and are actually quite adept at identifying appropriate adaptations and modifications (Carter & Hughes, 2005). Carter and Kennedy (2006) examined the effectiveness of using peers to support student access to the core curriculum. Considering the financial hardships faced by most school systems, peers represent a free and natural resource to provide considerable support without compromising their own learning. Research suggests that these peers benefit from their involvement with their classmates who have significant disabilities.

In addition, the use of peer supports may reduce displays of inappropriate behaviors (Carter, Cushing, Clark, & Kennedy, 2005; Carter & Hughes, 2006). As Carter and Kennedy

(2006) affirm, peers not only represent a feasible and practical means of support, but also an effective and socially valid one. This connection of students with significant disabilities and their peers without disabilities may lead to the development of friendships; a desired outcome of inclusive education.

Of the studies noting increases in the social acceptance of students with significant disabilities in inclusive settings, peer support strategies are the primary means by which assistance is provided to those students (Carter, Cushing, Clark, & Kennedy, 2005). They are the most natural of supports to be provided and tend to create less of a stigma with which the student with significant disabilities will have to deal. Based on these findings, peer support programs may be among the most natural and effective intervention strategies facilitating academic, behavioral, and social improvements for students with significant disabilities.

Influences of Social Interaction during Adolescence

Social interaction has a significant influence on the lives of students, particularly during adolescence. Research indicates that social interaction with age-appropriate peers can make substantial contributions to adolescents' intellectual development, academic and behavioral functioning, and skill acquisition (Bukowski, Newcomb, & Hartup, 1996; Ryan, 2000) of students with disabilities. It is within the context of social interactions that peer norms and values are reinforced, and adolescents access support systems (Berndt, 1996; Leffert & Siperstein, 2002; Marder, Wagner, & Sumi, 2003). For adolescents with more significant disabilities, the benefits associated with peer interaction are equally apparent. Numerous social and academic benefits for students with disabilities may be associated with social interaction with general education peers, including academic, functional, and social skill development; increased social

competence; exchange of social support; development of friendships; and improved quality of life (Fisher & Meyer, 2002; Hunt & Goetz, 1997).

In light of these potential benefits, recent emphasis placed on promoting social interaction among adolescents with disabilities and their general education peers is not surprising and becomes apparent in several areas. First, educational goals related to increasing peer interaction frequently are included in the individualized education programs of students with disabilities (Gelzheiser, McLane, Myers, & Pruzek, 1998). Second, increasing opportunities for social interaction among students with disabilities and their general education peers is a principle goal of recent legislative, policy, and research initiatives (Individuals with Disabilities Education Improvement Act, 2004). Third, high value has been placed on promoting peer interaction by multiple stakeholders in the educational community, including teachers (Agran, Alper, & Wehmeyer, 2002), general education students (Copeland, Hughes, Carter, Guth, Presley, Williams, & Fowler, 2004), parents (Palmer, Fuller, Arora, & Nelson, 2001), and administrators (Villa, Thousand, Meyers, & Nevin, 1996).

Despite the benefits associated with social interaction, high school students with more significant disabilities typically interact infrequently with their general education peers (Hughes, Rodi, Lorden, Pitkin, Derer, Hwang, & Cai, 1999). Although few researchers have examined social interaction in high school settings, their findings reveal a fairly consistent pattern: without specific intervention, few interactions between students with disabilities and their general education peers occur. These limited interactions are apparent in school settings both outside and within general education core classrooms. Hughes et al. (1999) conducted extensive observations of high school students during lunch in a school cafeteria. Students with intellectual disabilities

were observed to initiate or respond to general education peers on less than 10 occasions during 68 hours of observation, or less than .02% of the time. Similarly, Doré, Dion, Wagner, and Brunet (2002) and Cutts and Sigafoos (2001) found that negligible social interaction occurred during lunch time between high school students with intellectual disabilities and their general education peers. Hilton and Liberty (1992) found that across all of the interactions high school students with profound intellectual disabilities participated in over a 4-month period, less than 5% involved peers without disabilities.

Mu, Siegel, and Allinder (2000) examined the social interactions of students with moderate to severe intellectual disabilities and their general education peers in an inclusive cooking class. During small group activities, students with disabilities participated in fewer interactions than did their general education peers, interacted substantially more often with adults than with their peers, and were recipients of social interaction behaviors significantly more often than they were providers. Collectively, these descriptive studies suggest that, without intervention, (a) social interaction among students with intellectual disabilities and their general education peers occurs infrequently and (b) when students do engage in social interaction, it is primarily with school staff or other students with disabilities.

It is with these studies in mind that the present study was structured, with a particular emphasis on the skill development of skills and strategies that would allow students without disabilities to support and meaningfully include students with significant disabilities in their physical education classrooms. Additionally, one component of the intervention provided to those students without disabilities included strategies to avoid an overreliance on

paraprofessionals, which was immediately identified as a concern on the campus by two of the school's special education teachers.

Additional Research Needed

Additional research, however, is needed to address limitations associated with this emerging literature. First, these descriptive studies examined a relatively restricted set of variables related to social interaction. For example, Cutts and Sigafoos (2001) examined only the duration and quality of social interactions, and Dore´, Dion, Wagner, & Brunet, (2002) measured only the percentage of time that students with significant disabilities engaged in social interactions. Additional descriptive information regarding an expanded variety of measures, such as reciprocity, affects, and conversational topics, would provide richer information regarding the nature of students' social interactions. Moreover, the inclusion of additional measures would allow researchers to examine if and how environmental factors differentially influence certain aspects of peer interaction. In this research study, the occurrence of initiated and reciprocal interactions was observed and a number of environmental factors played a major part in the overall occurrence of those interactions.

Second, additional research is needed to examine how secondary school environments may influence measures of peer interaction. Although previous research has examined the association between various elementary and middle school settings on measures of social interaction (Fryxell & Kennedy, 1995), researchers have conducted few descriptive studies to examine this association at the high school level. Additional analysis is needed because high school environments are characterized by a variety of factors, including frequent rotation of classrooms, peers, and teachers; a significant emphasis on academics; and increased segregation

between students with disabilities and their general education peers as compared to elementary environments (U.S. Department of Education, 2006). Moreover, research is needed to examine interaction patterns across a range of high school settings typically encountered by students, such as cafeterias, hallways, gymnasiums, and general and special education classrooms. This research study, indeed, examined the gymnasium as another environment to consider when including students with significant disabilities in inclusive contexts. In previous studies with students with significant disabilities, researchers generally have only made comparisons of social interaction measures between two settings-general education classes and special education classes.

Third, the proximity of a general education peer support may influence social interaction among students with intellectual disabilities and their peers. In addition to providing academic support, general education peers can play an important role in teaching social interaction skills, expanding students' social networks, and prompting interaction with peers (Hughes et al., 2000). Although peer supports have been a component of interventions in studies (Shukla, Kennedy, & Cushing, 1999), the specific influence of the presence or absence of a peer support on social interaction measures across school settings has yet to be examined. This study considered this vital issue and the decision to train an entire class of students was made with the concept of proximity of support as a major consideration. This would assure significant proximity of support as all of the students would have the capability to step in and provide needed supports

Fourth, further data also are needed to determine the association among environmental factors, measures of social interaction, and student characteristics. For example, in several studies conducted with students with significant disabilities, researchers have examined the

association between aspects of school environments (e.g., instructional activities, student groupings, teacher prompting) and measures of academic behavior (e.g., academic responding, engagement) of students with significant disabilities (Helmstetter, Curry, Brennan, & Sampson-Saul, 1998; Logan & Malone, 1998). Researchers have recommended that this observational research be extended to include measures of social behavior. This research would further assist in identifying how aspects of high school environments, including the use of paraprofessionals, promote or hinder peer interaction, information that could inform and guide the design and implementation of effective interventions like classwide peer supports.

Studies Supporting the Use of Peer Support Strategies

Students with significant disabilities are not the only ones benefiting from peer support arrangements within general education contexts. Staub and Peck (1995) identified five outcomes for peers without disabilities who provide peer supports to students with disabilities: (a) reduced fear of human differences accompanied by increased awareness of disability, (b) growth in social cognition, (c) improvements in self-concept, (d) development of personal principles, and (e) development of warm and caring friendships.

Odom, Brown, Schwartz, Zercher, and Sandall (2002) found that all children suffer from rejection by their peers at some time during their childhood years. They noted that in typically developing young children, the rate of rejection by other children is approximately 10%, whereas children with disabilities were rejected by their peers at a rate of 33%. Although these research findings indicate that two-thirds of children with disabilities are socially accepted, the rate of social rejection (33%) is still much too high.

Peer interaction can have a substantial impact on the lives of adolescents with disabilities (Cutts & Sigafoos, 2001). However, social interaction among adolescents with significant disabilities and their general education peers occurs infrequently in secondary school settings (Carter, Cushing, Clark, & Kennedy, 2005).

Haring and Breen (1992) implemented a peer-mediated social network intervention program consisting of recruitment of general education peers, weekly feedback and planning meetings facilitated by adults, purposeful scheduling of interactions, peer data collection of social interactions, adult feedback on peer performance, peer reinforcement of the social behaviors of those receiving the peer supports, and social skill training for participants. Following introduction of the intervention, frequency of social interaction increased substantially for participants with moderate intellectual disabilities.

Staub and Hunt (1993) evaluated the effects of a five-day social interaction training program for four general education peer tutors supporting four students with significant disabilities. The training program addressed the concepts of disability awareness; use of person-first language; understanding the communicative function of certain behaviors; and brainstorming, discussing, and practicing techniques for increasing social interactions. Initiations and expansions of social interactions increased for two peers with mild to severe intellectual and physical disabilities and similar increases also were found for the targeted social behaviors of the other two participants.

In research conducted by Martella, Marchand-Martella, Young, & Macfarlane (1995), two peer tutors were taught to provide effective instructional supports when working with a student with severe intellectual disabilities and challenging behaviors during a math class. Both

peer tutors increased their use of specific praise statements and appropriate instructions and decreased their use of negative statements about persons with disabilities. In addition, corresponding decreases in the challenging behavior of the student with disabilities were observed. In general, these studies suggest that both skill-based and support-based interventions are effective at facilitating peer interactions.

Inclusive Practices in Physical Education Classrooms

Increasingly, students with disabilities are being educated in general physical education classes. The literature, however, on the efficacy of inclusive practices in general physical education classrooms is sparse. Vogler, Koranda, and Romance (2000) evaluated the efficacy of a general physical education program in which an adapted physical education specialist was used to provide instruction for a child with severe cerebral palsy. This support model was highly effective in time engagement and management. The qualitative findings of the study identified an increase in social acceptance and successful motor participation. Block, Klavina, & Flint (2004) found that with careful planning and the use of appropriate academic, behavioral, and communication supports, students with significant disabilities can be successfully included in general physical education classrooms. The study examined the effects of an intervention package to support five high school students with extensive support needs to initiate and engage in physical education activities with general education peers in their physical education classes. The authors examined the impact of (a) assessing participants' activity goals, (b) teaching self-prompting using a picture book, (c) programming common stimuli, and (d) asking participants to assess daily performance and evaluate daily goal achievement. The intervention package was associated with increases in the students' initiation of, and engagement in, physical education

activities with general education peers, as well as increases in ratings of quality of interaction. In general, however, there is limited research on the efficacy of inclusive practices for students with significant disabilities within physical education classrooms.

Benefits of Various Peer Support Models

Carter, Cushing, Clark, and Kennedy (2005) examined the effects of varying the number of peer supports on the social and academic outcomes of students with significant disabilities. Their findings indicate that changes in the configuration of peer support arrangements differentially impacts student outcomes, with higher levels of social interaction and contact with the general curriculum observed when students with significant disabilities worked with two peer supports, extending the developing literature on effective peer support interventions.

Students with significant disabilities engage in social interactions more frequently when working with two peer supports, in comparison to one peer support (Cushing & Kennedy, 2004). This difference in social interaction may be attributable to several factors. The addition of another student to the peer support arrangement in the classroom may provide additional interaction opportunities by increasing (a) the number of initiations directed to the student with significant disabilities and/or (b) the likelihood that social initiations initiated by students with significant disabilities would be responded to by peers. Moreover, the addition of a second peer support may further the cooperative nature of peer support interventions, increasing interdependent incidents in which all students must interact to complete class assignments or initiate natural social communication (Kennedy, 2001). Alterations in the number of peers did not, however, impact students' interactions with other classmates. Across conditions, students with disabilities engaged in few interactions with classmates beyond the peer support

arrangement. Although this may initially seem disappointing, the limited extent of peer interaction may be typical of more academically oriented and lecture dominated secondary-level general education classes. Most peer interaction in middle and high school general education classrooms is academic-related, with non-class-related conversation actively discouraged by educators (Brown, Klute & Carter, 2003; Hughes, Guth, & Copeland, 2004; Granstroem, 1996). Classwide peer support arrangements, therefore, may provide an avenue by which the social goals of students with significant disabilities can be furthered in settings within which peer interaction might otherwise be discouraged by educators.

Summary of the Research

Reflecting on the research discussed in this section, it is clear that with intentional, planned support interventions, peers without disabilities can become integral players in the acquisition of skills and the increased opportunities for social interaction for students with significant disabilities. Legislative and policy decisions have led to shifts in service delivery models for students with significant disabilities. There are many variables that lead to more inclusive placements for students with significant disabilities and research on the effects of inclusive placements of students with significant disabilities on the academic growth of general education students show positive results. The barriers to successful inclusion for students with significant disabilities were noted and various studies examining the impact of introducing the concept of peer supports into the support arrangement for students with significant disabilities identify a number of successful interventions. This study will add to this body of literature an additional effective strategy to be utilized for supporting students with more intense needs in inclusive contexts by an entire class of students.

CHAPTER THREE: METHODOLOGY

Introduction

This research study was originally planned as a multiple baseline study, however, a number of constraints led to the decision to eventually change the study to an AB design. Those constraints included the number of settings in which the study could ultimately occur, the window of opportunity for the training that needed to occur in both physical education classrooms, the last-minute placement of four students with significant disabilities in two physical education classes (two in each) rather than having an individual classroom environment for each of the four students involved in the study, and the need to move forward with the study as the end of the school year was fast approaching.

Teaching Design of AB Research Design

The most obvious limitation of this study is evident in its research design. Although data collected during baseline and post intervention were compared to evaluate a change in occurrence of initiated and reciprocal interactions of students with significant disabilities, the AB research design does not demonstrate causation or a functional relationship between the peer support training and any changes in interactions. Other extraneous conditions may have influenced the student's behavior (e.g., a change in the physical education teacher's responses, a second treatment unintentionally applied, novelty and uniqueness of the activity). Without replicating the intervention a second and third time, (which is typically done in an ABAB design), it is not possible to determine whether the interactions changed solely because of the intervention or whether another condition affected the outcome (Miltenberger, 1997; Polaha & Allen, 1999). Additionally, ethical consideration deemed it wholly inappropriate to encourage

the peers who were trained in the use of peer supports to return to baseline levels, which could have had a negative impact on the future social acceptance of the four primary participants.

Single Subject Research

Single subject research was conducted in the form of an AB design to measure the impact of formalized class-wide peer support training on the occurrence of initiated and reciprocal peer interactions of students with significant disabilities within inclusive high school contexts. In addition, information was gathered through informal anecdotal observations. Those observations addressed the study setting, the involvement of substitute teachers, activities chosen for each observation session, and the various supports available to the four primary participants.

AB research designs are most appropriate in those situations where a return to the baseline condition is unethical, unfeasible, or undesired (Foster, Watson, Meeks & Young, 2002). Using single subject research design, four students with significant disabilities were observed in inclusive physical education classes both prior to, and following, the provision of peer support training as an intervention.

Several characteristics associated with single subject research designs make it a useful way to answer questions about the effects of peer support training on the initiated and reciprocal peer interactions of students with significant disabilities in inclusive settings. One aspect of single subject research design is the ability of this method to measure behaviors in the applied setting where peer supports are offered (Kazdin, 1982). By conducting research in applied settings, outcomes that are more representative of natural behaviors of individuals are more likely to be documented than would occur in more contrived settings. Within this applied context, single subject research designs can be used to examine effects of interventions

implemented. Outcomes of this research method can promote effective documentation of peer support strategies. Since single subject research designs focus on examining effects of interventions on each individual participant; this method complements the ability of researchers, and eventually field practitioners, to meet the individual needs of students with significant disabilities in inclusive settings.

Investigations of large homogeneous samples are difficult to administer outside individual classroom settings because variables often cannot be controlled. In individual classroom settings, a good deal of control can be maintained over a number of variables, but it may not be possible to replicate or generalize findings outside the classroom. In addition, it is quite difficult to identify a large number of individuals with significant disabilities in a given area to obtain a large sample size, particularly in the very small school in a rural school supervisory district. Because interventions are applied systematically and compared with baseline data in the same settings, an investigation on the impact of peer support training on the peer interactions of students with significant disabilities using single subject research designs could occur in classroom settings. It is with this knowledge that the single subject method was utilized in this study.

Setting

Study participants were selected from a rural secondary school (grades 7-12) with an enrollment of 295 students; 57% male and 43% female. The school enrollment is comprised of 99% white and 1% African American students. Thirty percent of the school population is eligible for free or reduced lunch, the attendance rate is 93.4%, and 13.8% of the students have been

identified as having a disability. There are 29 teachers and a number of ancillary staff supporting the students in the school.

On the 2006-2007 New England Common Assessment Program (NECAP), the standardized assessment used by the school to meet the accountability requirements of No Child Left Behind, the school scored above state averages in the subtests on Math Concepts, Math Skills, Math Problems, and Writing Conventions while scoring below the state average in Reading Basic Skills, Reading Analysis and Interpretation, and Writing Effectiveness. The district's Science assessment was given for the first time in the 2006-2007 school year so comparative data was not available.

The classroom settings were two physical education classes containing heterogeneous student populations (class sizes N = 17, 20). Classrooms selected had two students each with significant disabilities who participated in the class. The physical education teacher agreed to participate in the study and peers without disabilities were trained to support the student with significant disabilities. Each class was taught by the same physical education teacher.

Typical Class Routine

The physical education teacher had a very predictable class schedule each day with the exception of the activity in which the students participated. Discussion will follow related to the actions and reactions of the students with significant disabilities in this setting so it is relevant to have a clear picture of what happened on a typical day. When the bell rang for each PE class to begin, students would come into the gym individually or in small groups and most would go downstairs to change out in the locker room. During that time, (typically about six to seven minutes) those students who chose not to change out, including three of the four primary

participants (the fourth would change out in the bathroom attached to his self-contained classroom) would wander around and either converse with each other waiting for the class to start or individually might pick up a basketball and shoot baskets or kick a stray soccer ball. Once the students changing out arrived, the coach would gather the class in a circle, do an attendance check, and explain the activity of the day. Most of the time it was an activity in which they were familiar (coneball, volleyball, wiffle ball, kickball) and, on occasion, an activity in which they had not participated and directions and rules needed more time to be explained. Then the students would stretch for about five minutes, walk a few laps around the outside of the basketball court, and then jog a few laps before the actual activity of the day began.

Participants

Primary Participants

Table 1 Demographic Information on Primary Participants

Name	Age	Grade	Ethnicity	Disability
John	17	10	Caucasian	Learning Impaired, Emotional Disturbance, Major Depressive Disorder, Recurrent
Paul	21	12	Caucasian	Learning Impaired, Pervasive Developmental Disorder, Attention Deficit Disorder, Mental Disassociation
Travis	15	9	Caucasian	Autism Spectrum Disorder, Non-Verbal Learning Disorder
Robert	15	9	Caucasian	Learning Impaired, Hypoplasia of the Cerebellar Hemispheres, Physically Impaired

Table One summarizes the demographic information for the four primary participants in the study. Information includes name, age, grade, ethnicity, and identified disabilities. More specific information follows for each of the four primary participants.

"John"

"John" is a 17 year old Caucasian male in the 10th grade. He has been identified as eligible for special education services as a student with a Learning Impairment. In Vermont, any student who scores 1.5 standard deviations below the mean on a standardized intelligence test is identified as having a Learning Impairment. The scores from the Wechsler Intelligence Scale for Children (WISC) show him as functioning in the bottom 1% of the population with an Intelligence Quotient of 41. He had very little inter-cognitive variance in his subtest scores as all scores fell well within the learning impaired range. On the Woodcock-Johnson Achievement Test, John had a range of standard scores from 40 in Word Reading to 51 in Math Reasoning. He is somewhat proficient on the computer and enjoys working on computer games addressing math and language skill development. John is currently functioning at an approximate second grade level in all subject areas. He is included in a Physical Education class and addresses the other areas of his curriculum in a self-contained special education classroom. In addition to his Learning Impairment classification, John has a secondary disability of Emotional Disturbance with Major Depressive Disorder, Recurrent.

John has a difficult time remaining on task and becomes distracted easily. In addition, he has difficulty with peer relationships. He is addressing goals and objectives on his Individual Education Plan on learning to advocate for himself when in an environment with age-appropriate peers. He is more at ease with much younger children and adults. As a result of his lack of peer contact, he has struggled with issues related to low self-esteem. He currently needs cuing to initiate conversations with age-appropriate peers. John is receiving private counseling to assist in dealing with issues such as accountability, lying, safety, following directions, respect, and

compliance. The school counselor has supported this work during the time that John is at school. There are no known medical conditions and John takes no medication.

"Paul"

"Paul" is a 21 year old Caucasian male who is a 12th grade student. He has also been identified as being Learning Impaired with a diagnosis of Pervasive Developmental Disorder, Attention Deficit Disorder, and Mental Disassociation. He is included in a Physical Education and Science class and addresses the other areas of his curriculum in a self-contained special education classroom. He needs an extremely structured environment and a visual schedule to successfully address the components of his daily routine. He functions, academically, at approximately the first grade level in all subject areas and his most recent assessments show a cognitive standard score of 41 (Comprehensive Test of Non-Verbal Ability) and 40 (WISC). Since he will be aging out of the high school setting this school year, he has been addressing skills needed for gainful employment.

Paul has had incidents where he has run off of the campus due to frustration and anxiety and an inability to verbally express those frustrations. Specific goals on his Individual Education Plan address issues such as decreasing swearing, decreasing aggressive behaviors, and demonstrating alternative behaviors to leaving the building when upset. A paraprofessional is assigned to shadow his movements throughout the school setting and intervene when necessary. Paul is very social and enjoys meeting people.

"Travis"

"Travis" is a 15 year old Caucasian male who is in the 9th grade at the high school. He has been diagnosed with Autism Spectrum Disorder, Sensory Integration Disorders, and a Non-Verbal Learning Disorder. He functions at a significantly discrepant level than his peers in all subject areas. His most recent WISC scores find him with an Intelligence Quotient of 48. He is included in a Physical Education class and addresses the other areas of his curriculum in a self-contained special education classroom. He has very slow processing speed and struggles with visual motor coordination. He requires ongoing verbal prompting when attempting most academic and social tasks.

Travis has experienced social adjustment problems since his Kindergarten school year. He does not seek out friendships with peers, is impulsive, becomes easily frustrated, has temper outbursts, interrupts frequently, does not learn from experience, is bound by routine, and avoids eye contact. Additionally, Travis does not understand social cues or rules associated with acceptable social behavior. He overreacts to certain smells, prefers to wear clothes made of certain fabrics, and has a restricted diet. He has interests in repeated tasks and activities involving rote memory and feels most comfortable when he is working on familiar tasks. These characteristics are all very typical of students identified with Autism Spectrum and Sensory Integration Disorders. Travis needs cues to help with organization. He benefits from using checklists, a student planner, colored folders, and a subject-divided notebook. Travis is included in a physical education class and receives the rest of his instruction in a self-contained classroom.

"Robert"

"Robert" is a 15 year old Caucasian male in the 10th grade. He has been identified as a student with Learning and Physical Impairments, with a non-verbal IQ of 44 (WISC), placing him below the 1st percentile compared to other children assessed with the same instrument. He uses a Go Talk to communicate his needs and wants. When he does communicate orally, it is typically echolalic speech or simple word phrases. He is included in a Physical Education class and addresses the other areas of his curriculum in a self-contained classroom. He is easily distracted, has poor listening skills, and occasionally interrupts the conversations of peers and adults. Socially, Robert gets along well with adults and classroom peers and loves being in school and learning. He has been diagnosed with hypoplasia of the cerebellar hemispheres (Dandy Walker syndrome), a cyst on the stem of his brain and exhibits many of the physical characteristics of a student with Cerebral Palsy. He uses a wheelchair as he accesses the school environment and on a few occasions has used a walker to ambulate for shorter distances. Robert receives direct services from a Speech and Language Therapist, Occupational and Physical Therapy throughout the school week, and remediation of skills in a life skills program created by the school.

Secondary Participants

Peers without Disabilities

Thirty-seven students in two different physical education classes were chosen as secondary participants and participated in two 50-minute peer support training sessions on strategies to meaningfully support students with significant disabilities in their physical education classes. The morning class was comprised of 17 students (10 males and 7 females)

who were seniors at the school and the afternoon class had 20 students (11 males and 9 females) who were freshmen. Each of the students participated in the peer support training and was asked to complete a pre/post survey. The students in each class represented a wide range of personal and social characteristics and varying levels of experience and previous contact with students with significant disabilities.

Teachers

Three teachers, two special education teachers and one physical education teacher were identified as secondary participants in this study. One special education teacher, who was the case manager for each of the four boys with significant disabilities, was involved from the outset, assisting the researcher in identifying students for the study, identifying settings for the study to occur, attending the training provided to the students in both physical education classes, completing a teacher satisfaction survey, and consistently observing the strategies being utilized in the gymnasium following the intervention. A second special education teacher asked to be involved as she felt that the strategies shared with the students in the two classes could be utilized for some of her students. She was asked to observe one of the two trainings, was asked to complete a teacher satisfaction survey, and was requested to visit the gymnasium to witness any changes in student interactions following the peer support training. The third teacher involved as a secondary participant was the physical education teacher who introduced the researcher to the students in his two classes. He was asked to attend and participate in the trainings for both classes, witness, first-hand, the peer interactions, and complete a teacher satisfaction survey.

Independent Variable

The independent variable in this study, the variable manipulated, was the peer support training offered to the students in the physical education classrooms. The students in each class received the same training consisting of two 50-minute sessions occurring on successive school days. The emphasis of the training was in the use of social, academic, and physical supports in order to meaningfully include students with significant disabilities in their physical education classes.

Intentional, Planned Interventions

Peers without disabilities may increase access to the general curriculum and to all school-related activities for students with significant disabilities and allow for positive social interactions and social relationships to develop between them and students with significant disabilities. However, there is little or no spontaneous gain in peer interaction solely from placement of children with significant disabilities with typically developing peers (Hundert, Mahoney, Mundy & Vernon, 1998).

Gains in the peer interactions of children with significant disabilities require planned intervention. Skills of initiating and responding to peer communication that result in sustained initiated and reciprocal interactions under minimal adult involvement must be practiced and applied in natural settings in order to be generalized and maintained. The intervention identified for the peers in this study needed to be practical to implement and maintain within the available resources in the school environment. In addition, the teachers and staff using the interventions had to be able to adapt the intervention for their situations and be able to design new

interventions for new situations as no two students with significant disabilities were alike and each presented new and unique challenges to the support staff.

Training

Training for students without disabilities to support their classmates with significant disabilities consisted of several important components. Peers without disabilities had an opportunity to discuss the rationale for their involvement in delivering support to their classmates, reviewed the expectations related to this role, and examined information about how their peers with significant disabilities communicated, interacted with their environment, and learned most effectively. Peers without disabilities then participated in training on strategies for supporting the students with significant disabilities that included: (a) adapting and modifying class activities to facilitate meaningful participation, (b) using the concept of partial participation to identify parts of an activity that can be accomplished in a physical education class, (c) identifying priority goals and objectives on a student's Individual Education Plan that can be addressed within the parameters of the activity being addressed in the physical education class, (d) providing frequent, positive feedback, (e) modeling age-appropriate and contextually relevant communication skills utilizing augmentative communication devices; and (f) facilitating interactions with other students in the class in ways that provide alternatives to overreliance on paraprofessionals. The peer support training incorporated general awareness activities and information and support strategies were modeled based on the individualized needs of the students with significant disabilities whom the classmates without disabilities would be assisting. Peer support training (see Appendix A) occurred over two 50-minute class periods on consecutive school days in the classroom where the research was conducted.

On both days of training for the morning class, the physical education teacher, the case manager for the two students with significant disabilities, and one paraprofessional who provides supports for Paul were in attendance. The physical education teacher was asked to attend as his presence was expected to provide support for the peer support initiatives and give the students in his class “permission” to implement the strategies once they returned to the classroom. The case manager had been intricately involved in the study from its inception at the school and was excited to attend the training. The one paraprofessional was asked to be in attendance as a strategy related to natural supports versus paraprofessional supports would be discussed. In addition, it was deemed important to have the paraprofessional aware of the other five strategies that were being introduced and the possible impacts that those strategies could have on both Paul, who she supported for most of the day, and for John, who she also supported as needed.

For the training that occurred for the afternoon class, the physical education teacher, the case manager, an additional special education teacher, and two paraprofessionals attended. Again, the presence, and active participation, of the physical education teacher gave the students a feeling of support for their increased involvement with their two peers with significant disabilities and he encouraged them to use the strategies presented at the end of the second session. The case manager attended again as she wanted to see if there might be any different variables that a freshman class might present that the senior class had not. The second special education teacher attended because she wanted to see the presentation of strategies that she believed would be applicable to some of the students with disabilities that she case managed. Both of the assistants attended the training as it was determined that they needed to be aware of

the strategies shared in the training and because the two students who they supported also attended the training.

Training- Day One

The researcher began the intervention in both classrooms by re-introducing himself to the classes. The researcher had met the students in each class briefly while Informed Consent Forms (see Appendix B) were given to each of the students to take home and have signed. Following the introductions in both classes, the researcher asked the participants in each class to complete an Informed Assent Form (see Appendix C) and then shared the story of a young girl named "Amy" who had significant disabilities and was fully included in a general education classroom in a small school (see Appendix D). The story emphasized the importance of access to the general education setting and the use of appropriate accommodations, modifications, augmentative communication devices, and peer supports to successfully include a student with more significant disabilities in a general education classroom. Additionally, the story described the unfortunate, unanticipated death of "Amy" and discussed the impact that untimely death had on the students, teachers, administrators, and other support staff at her school and the quality of life that she had in the short time she was alive. The researcher then informed the students that he would be demonstrating and modeling strategies they would be able to utilize to modify curriculum expectations and/or the learning environment in order for a student with significant disabilities to be meaningfully included in their Physical Education classes.

The researcher then introduced the *IEP at a Glance* (see Appendices E, F for the morning classroom; Appendices G, H for the afternoon classroom) for each of the boys with significant disabilities included in the two physical education classrooms. The *IEP at a Glance* is a one-page

document that identifies the priority educational goals for each student with significant disabilities and demonstrates how those priority goals can be addressed in a variety of inclusive settings throughout the school day, including the physical education classroom. Following the presentation and discussion of the *IEP at a Glance* for each student, the prospective peer supporters were then asked to participate in a modeled mini-lesson on a specific Physical Education activity; *Soccer Golf* (see Appendix I) where Vermont Standards for Physical Education (See Appendix J) were addressed. Throughout the mini-lesson, three examples of modified curriculum outcomes were modeled (specific activity participation, partial participation, and addressing other goals and objectives on the students' Individual Education Plans (*IEP at a Glance*). While each component of the *Soccer Golf* mini lesson was demonstrated, the researcher modeled those three strategies through the following activities:

Specific activity participation.

Prospective peer supporters were instructed in how to identify some of the expectations of a single activity designed for the entire class that a student with significant disabilities could also accomplish, often with little or no additional support. In the *Soccer Golf* activity, the researcher demonstrated how *waiting for a turn* and *encouraging other peers* were expected outcomes for all students and appropriate activities to be practiced by students with significant disabilities.

Partial participation.

Prospective peer supporters were shown how to use partial participation to meaningfully include a student with significant disabilities in the classroom activity. The researcher demonstrated that while individual students were working on kicking the soccer ball toward the

cones, the student with significant disabilities in the wheelchair could either roll a ball using an adapted ramp or help to keep score.

Addressing other priority goals.

Prospective peer supporters were shown how to address other priority educational goals from an Individual Education Plan (*IEP at a Glance*) during a group activity. The prospective peer supporters were informed that it is appropriate, on occasion, for the student with significant disabilities to be working on other priority goals as long as they are imbedded into what is occurring in the Physical Education class. If, for instance, a student is addressing the skill of carrying on a three exchange conversation, it is not necessary, or appropriate, for a paraprofessional to take the student aside to work on that skill in isolation when it could be imbedded into the activity assigned to the class as a whole. The researcher demonstrated how, during the Socce*r Golf* activity, a student may be working on following directions or practicing fine-motor skills listed on each student's *IEP at a Glance.*

Guided practice- specific activity participation.

In groups of four to five students, peers practiced some of the rules of etiquette during the game. During that time, the student with significant disabilities (modeled by the researcher) practiced many of those same skills. Specific skills included whispering on the field, remaining silent while others were kicking, and congratulating other students for good shots.

Guided practice- partial participation.

Students without disabilities were learning all of the terms to be memorized related to golf scoring (par, birdie, eagle, bogey, hole in one, fore, green, fairway). At the same time, the student with significant disabilities (modeled by the researcher) was learning to recognize the

difference between a “birdie” and a “bogey”. Participants were reminded that students with significant disabilities should not work on separate activities when partial participation is possible.

Guided practice- addressing other priority goals.

Small groups were asked to discuss their strategies for trying to kick their soccer ball closest to the cone. The student with significant disabilities (modeled by the researcher) demonstrated working on communication goals from one *IEP at a Glance* of *maintaining two-three exchange conversations* (John) or a social goal from another *IEP at a Glance* of *practice taking turns* (Paul). Students were asked to practice identifying activities from the *IEP at a Glance* and applying them to classroom situations

A more specific guided practice followed where the students use a “Think, Pair, Share” activity to address the following assignment: “Choose an activity that Mr. Smith (physical education teacher) might assign in this physical education classroom. Name one strategy that you can use to adapt or modify that assignment using specific activity participation, partial participation, and addressing other goals, objectives on an Individual Education Plan. During the “Think, Pair, Share”, the researcher asked students to think silently about their answers. The researcher then asked the students to pair up with a partner to compare or discuss their responses. Finally, researcher randomly called on students to summarize their discussions and asked students to identify a number of strategies for each area, including helping to set out cones before the game (specific), pointing to a picture of a golf club, golf ball, and golf tee (partial), and returning a greeting from a friend (addressing a priority educational goals on the IEP).

Training-Day Two

The second training session for both classes focused on the effectiveness and use of positive feedback and reinforcement to strengthen acceptable behaviors. The concepts of age-appropriate and contextually relevant communication skills were also presented. Additionally, the uses of augmentative communication devices for meaningful participation in activities occurring in a physical education classroom were demonstrated. Students were shown how the devices used by their classmate worked and learned to identify ways in which the devices could be programmed by them, using their voices, to assist in successful and meaningful participation. Finally, prospective peer supporters learned strategies to facilitate the development of peer relations and interactions in ways that provide alternatives to overreliance on paraprofessionals.

Positive Feedback

The positive feedback portion of the lesson included a brief role play where the researcher demonstrated how demeaning it can be when teachers use negative rather than positive feedback. A conversation with a "student" (role-played by the physical education teacher) included negative comments about a student who is notorious for missing or late work. That exchange was followed by a more appropriate response to a student's late or missing work.

Guided Practice-Positive Feedback

Following the non-example and appropriate example of positive feedback, the researcher demonstrated the importance of specific, detailed responses when providing positive reinforcement and how to specifically describe to a student what he or she did that was positive and why their positive behavior was important. For example, instead of saying "Excellent job, John", the prospective peer supporters could say "John, excellent job on starting your

assignment. You will be finished in plenty of time to get to your next class!" The researcher then modeled additional examples of positive feedback statements that included:

"Jimmy, I like the way you held the door, thank you for helping!"

"Sarah, I liked the way you returned quietly from lunch, thank you for respecting others!"

Additionally, the use of age-appropriate greetings and language were encouraged. For example, the students without disabilities were encouraged to say things like "What's up?" or "What's happenin'?" as an age-appropriate greeting rather than greeting the student using language that might be intended to address the student's current functional age.

Students were again placed in small groups and asked to identify examples of ways in which they would use positive feedback to reinforce appropriate behaviors or responses of students with significant disabilities. Each group was able to identify at least one example.

Augmentative Communication

One student in each of the two classrooms used an augmentative communication device to express needs and wants. One student used a "Go Talk" while the other used a "Cheap Talk". In each classroom, the researcher demonstrated that while the rest of the class was participating in a discussion about golf terms, the student with significant disabilities could participate if the augmentative communication device had been programmed appropriately. Prior to the training session on day two, the devices were programmed to say "a birdie is when a golfer gets the ball in the cup in one shot less than the expected score, or par". The researcher then gave the devices to a student in both trainings and told the class that the student would be playing the role of a student who could not verbally communicate his needs or wants. The researcher engaged the

entire class in a conversation related to the definitions of golf terminology. Since the Physical Education teacher was an avid golfer, the researcher asked him to describe a double bogie! The researcher then purposefully asked the student who was role-playing a student who could not communicate verbally for the definition of “birdie”, requiring successful use of the augmentative communication device to answer the question.

In addition, both augmentative devices were preprogrammed with recordings of certain greetings and statements that the student might use throughout a school day. For instance, one device had an icon of a boy drinking a glass of water and, when the button was activated, the device was programmed to say “I’m thirsty, can you take me to get a drink? (for Robert; student who uses a wheelchair). The other device had a picture of two people shaking hands and the recording said “How’s it going?”

Guided practice- Augmentative Communication

The students were shown how the statements and phrases were recorded into each device and then were asked to take turns recording their voices on the buttons on the devices. Students were encouraged to record some of the greetings and other messages for the students with significant disabilities in their voices as it is much more natural for an age-appropriate voice to be on the devices rather than the voice of a paraprofessional or other adult providing supports. For training, some of the messages recorded on the devices included “Will you read a story to me?”, “Can you hand me one of those soccer balls, please?”, and “Can I be on your team?”

Overreliance on Paraprofessionals

Finally, the day two session addressed strategies to facilitate the development of peer relations and interactions in ways that provide alternatives to overreliance on paraprofessionals.

It had become apparent that paraprofessionals assigned to three of the four boys were either not needed or, in one student's case, had created a very dependent student. Hence, the three paraprofessionals were asked to attend the trainings along with three of the four boys. The students in the training were taught to use statements such as "Mrs. Smith (paraprofessional), can I work with Paul for awhile?" or (to paraprofessional) "Would it be OK if Travis helps our group with our project? He can keep track of the answers we give".

Guided practice, Overreliance on Paraprofessionals

In small groups, the students were given a scenario and asked to create a statement that would encourage a student with significant disabilities working with a paraprofessional to work, instead, with peers and would not insult the paraprofessional. The groups were able to create a number of excellent statements, including "I'm going to take Robert over to the pitcher's mound so he can pitch" and "Can Paul stretch with our group? We need a fourth person."

Training Evaluation

Following the Guided Practice activities on both training days, the researcher summarized the strategies used and answered any questions posed by the students. Evaluations were then done using a paper-pencil test (see Appendix K, L), where students were asked the following six questions (three each day):

Day One

1. Name a strategy that can be used during a physical education activity that will modify outcomes for a student with significant disabilities using specific activity participation.
2 Name a strategy that can be used to modify a physical education skill for a student with significant disabilities using partial participation.

3. Name a strategy that can be used to modify a physical education outcome for a student with significant disabilities through addressing other goals and objectives from the IEP.

Day Two

4. What is something that can be said that would be an example of positive reinforcement or positive feedback?
5. Identify a strategy that you would use with an augmentative communication device to include a student with significant disabilities in an activity on which you and your peers were working?
6. Identify something you might say to an adult working in a classroom with a student with significant disabilities that would allow you to better interact and support that student and avoid overreliance on that adult**.**

Student Pre/Post Survey

In order to determine whether the training for the peers had been effective, the thirty-seven students trained to be peer supporters participated in a pre-post survey (See Appendix M). This survey examined the extent to which the students were knowledgeable about such things as adapting classroom activities, addressing priority goals and objectives, the use of positive feedback, using augmentative communication and technology as a tool for communication, and identifying strategies to provide alternatives to over-reliance on paraprofessionals. The pre-test was given just before day one training commenced and the post-intervention survey was administered immediately after day two training was completed.

Dependent Measures

Operational Definitions of Observed Behaviors

The behaviors related to the type of interactions of students with significant disabilities support either initiated or reciprocal interactions. When investigating an aspect of behavior that is vague or may have multiple meanings, such as initiated or reciprocal peer interactions, researchers must define such terms or concepts in ways that are precise, measurable, and concrete. Such definitions are called operational definitions. They are clear, concise detailed definitions of a measure needed when data are collected through observation and should be developed and tested before the data collection begins. Identifying the steps used in defining each variable allows others to evaluate and potentially replicate the research study. The success or failure of a research project often depends on how well the variables are operationally defined.

Initiated Interactions

An initiated interaction is any cue or behavior directed from a student with significant disabilities to a peer in the room that results in social contact. These initiations set the occasion for a social or task-related interaction response to occur and may be vocal/verbal or gestural in form. Eye contact may also serve as a form of initiation for students with significant disabilities, particularly for the two students who have expressive language delays and utilize the augmentative communication. Inappropriate behaviors (e.g., hitting, screaming) may also be identified as initiations and may or may not be given a response.

Reciprocal Interactions

A reciprocal interaction would be any response to an initiation, regardless of the form of the response. Reciprocal interactions can be appropriate or inappropriate responses. For example, if a student with significant disabilities is asked to underline his name and does so, a reciprocal interaction would be documented. Additionally, if a peer without disabilities greets the student with significant disabilities and the response of the student with significant disabilities is to kick that peer, a reciprocal response is also acknowledged. Again, all reciprocal interactions observed and documented in this study were either verbal or gestural in nature.

Instrumentation

Partial interval recording was used during the data collection for this study. The advantage of the partial interval recording method is that it provides an estimate of frequency of a behavior. A major disadvantage of partial interval recording is that is requires an observer's undivided attention. Observing and recording data can be challenging, especially when using a tape recorder with 30-second cues since the person recording must attend to both the auditory timing of intervals as well as the student behaviors.

Specific behaviors depicting the peer interactions of four students with significant disabilities were observed and documented. In addition to observing the occurrence of interactions exhibited by the students with significant disabilities, the researcher and interraters identified the type of interactions as either initiated interaction or a reciprocal. The data collection instrument (see Appendix N) was created specifically for this study. It consists of columns for each interval, opportunities to circle “yes” or “no” to document whether an interaction occurred during each 30-second interval, and a column to indicate whether the

interaction observed in each interval was initiated by the student with significant disabilities (II) or a reciprocal interaction as a response to an interaction from a peer (RI). The bottom of the interval columns allows the observer to enter both the total interactions observed and the total initiated and reciprocal counts (see Appendix N). Finally, a section at the bottom of the instrument is dedicated to allow the researcher to gather anecdotal information that may inform the study as well.

Partial interval observations typically utilize smaller intervals of time, often 5, 10,or 15 seconds, as the shorter the interval, the more accurate the estimate of the occurrence of the behavior will be (Kennedy, 2004b). When the behavior being observed happens less frequently, it is acceptable to lengthen the partial interval to 30 seconds but any period much longer than that may inflate how often the behavior is actually occurring (Repp, Roberts, Slack, Repp, & Berkler, 1976).

Partial interval recording is often used when it is important to know if an identified behavior occurred for even part of the observed interval. Such recording is done when a researcher is interested in behavior that occurs or does not occur in any part of the interval and that the behavior usually does not consume the entire interval. Once a 60-minute timeframe of observations was identified, that timeframe was divided into smaller intervals that were all equal in length. In this study, a 60-minute observational session was separated into 30-second intervals (see Appendix N). In the partial interval recording, the researcher(s) was required to mark whether an interaction occurred by circling either “yes” or “no” on the data collection form and mark whether the interaction observed was initiated or reciprocal by circling either II (initiated interaction) or RI (reciprocal interaction). Because there were two students placed in each of the

two physical education classes to be observed, the two students were observed using two consecutive 30-second intervals each to assure that both students were observed in similar settings and circumstances throughout the 60-minute session.

A pre-recorded tape with 30-second intervals was used to keep track of the duration of each interval. A clipboard with the 3-page data collection sheet was used to assist the researcher in marking whether a behavior was observed. During the observations when interrater reliability was being determined, the researchers sat next to each other and the same audio device with dual headphones was utilized with pre-recorded partial interval prompt signals to assure that both observers heard the exact time that the intervals were beginning and ending throughout the 60-minute observation period. For partial interval recording, the researcher counts the number of intervals in which behavior had been observed.

Interrater Training

Two undergraduate students from a local state college volunteered as interraters and participated in training on the use of the data collection tool, the operational definitions of behaviors to be observed and the data collection process to be used. The researcher and both students piloted the tool in a Marine Biology class where a student with significant disabilities was included.

Interrater Agreement

To determine reliability of measurement associated with single subject research designs is to determine the accuracy of the data (Tawney & Gast, 1984). Often, data are collected through observation of behaviors as they occur. With one observer recording those behaviors, it

is possible that the observer's bias may influence data collection, or that the observer will be inconsistent in the collection of data during the observations. When two or more independent observers are used to record target behaviors, an estimate of interrater reliability needs to be obtained. The formula used most frequently to calculate interrater agreement is the point-by-point method in which the number of agreements between observers is divided by the number of agreements plus the number of disagreements multiplied by 100. A measure of the validity and objectivity of the data then is the extent to which the observers agreed about what they observed. If there is a very low level of agreement about what happened during a certain period of an observation, then researchers cannot have much confidence in any of the individual reports that may come from a study (Pedhazur & Schmelkin, 1991). If interrater agreement checks are made in at least 30% of all observation periods across all conditions of an investigation, and agreement is high (typically above 80%; preferably closer to 90%), confidence in the measurement system is high. A level of 80% reliability was identified for this study and an interrater was utilized for at least 30% of the pre and post intervention observations done in each classroom. Such checks are an evaluation of a threat to validity known as instrumentation.

Procedures

Following the approval of the Institutional Review Board (see Appendix O), the following procedures were planned:

a) Informed Consent/Assent forms (Appendices B, C, P, Q) were brought to the school and disseminated (through the special education teacher) to the students with significant disabilities and directly to the students without disabilities who participated in the peer support training

b) Interrater training occurred following the receipt of permission to participate. An overview of the data collection tool (see Appendix N) was conducted and the two undergraduate students assisting with the observations were taught the difference between II (Initiated Interactions) and RI (Reciprocal Interactions) used in the data collection tool.

c) Upon receipt of the Informed Consent/Assent documents (see Appendix B, C, P, and Q), daily data were collected in the two classrooms to establish a stable baseline of behaviors in each classroom. For the purposes of this study, a stable baseline was one in which there was no more than one data point difference in interactions over four consecutive observations prior to the introduction of the peer support training.

d) The Physical Education teacher was asked to identify the next two available dates for the 50-minute training session on supporting students with significant disabilities. It was planned that such training would result in a two-day suspension of data collection as the training would occur during the regular physical education class time.

e) As peer support training was planned for the students in the afternoon classroom (see Appendix A), baseline data collection continued for the morning classroom.

f) Post-intervention observations planned in the afternoon classroom to collect data on the occurrence and type of interactions observed for the two students in that classroom, (see Appendix N) – note; interrater reliability data were to be collected

during at least 30% of observations completed in each classroom; pre and post-intervention.

g) The next available dates for the second training for the morning classroom were identified.

h) Post-intervention data finished in both classrooms.

Internal Validity

The ability of an experimental design to limit alternative explanations of outcomes is referred to as internal validity (Burns, Walsh, & Owen, 1997). Single subject research designs enable researchers to reduce or eliminate threats to internal validity through systematic application of an intervention. The use of repeated measures during application of the peer support intervention as well as during a period of time before the intervention is initiated (referred to as the baseline or probe condition), will enable the researcher to control for threats to internal validity. With single subject research designs, the target behaviors are repeatedly measured during baseline and intervention conditions. Through visual inspection of graphed data, the level and trend of the behavior was analyzed. A relationship can be shown when there is a consistent change in level and/or trend of the behavior during the intervention condition, compared to levels during the baseline phase.

Threats to Internal Validity

Throughout the time that data were collected following the treatment (peer support training), the students in each of the classrooms were reminded and encouraged by the teacher and in-class paraprofessional to utilize ongoing prompting of the peers as part of the maintenance

of the desired behaviors. This is considered best practice in educational settings, as students tend to retain more information presented initially and then reinforced consistently (Elmore, Peterson, & McCarthy, 1996). It may also constitute a threat to the internal validity of the study. The participants in groups may be unlike in some way, so they may respond in different ways to the independent variable. Additionally, expectations of the outcome may inadvertently influence some of the participants or caused the researcher to view data in a different way.

External Validity

External validity refers to the extent to which the peer support training can be generalized to other individuals, behaviors, and/or conditions (Gall, Borg, & Gall, 1996). Replication of effects across behaviors, conditions, and individuals determines the extent of external validity. Applications of single subject research designs are replicated to extend generality of findings. Generality is determined by the number of similarities and differences in a series of studies that systematically replicate an experiment. Systematic replication occurs by repeating the investigation with one or more changes such as types of participants, behaviors, settings, or investigator.

Threats to External Validity

There are a few considerations that must be addressed which could impact the external validity of the study. External validity could be impacted if the researcher has not sufficiently described the research process for others to replicate. The research study was limited to one school, and the four students with significant disabilities were included in only two classrooms.

Additionally, the same teacher headed both of the classes. It is difficult to generalize from school to school as a more or less inclusive school may show very different results.

Social Validity

Social validity is the cornerstone of research in education. It is the estimation of the importance, effectiveness, appropriateness, and/or satisfaction various people experience in relation to a particular intervention (Kennedy, 2005). Educational research occurs in applied contexts and researchers need to know how the support personnel in those school settings react to the interventions applied. Horner, Carr, Halle, McGee, & Wolery (2005) have identified four goals of social validity within the context of single subject research. They first suggest that the dependent variable should have significant social importance. Secondly, researchers must also establish that the intervention can be applied by teachers or other support personnel in schools or other educational contexts. Thirdly, researchers must also establish that teachers or other support personnel find the intervention acceptable, feasible, and effective, and that they plan to use the intervention in their practice. Finally, Horner, Dunlap, & Koegel (1988) emphasize the importance of establishing that the intervention met the need originally identified in the study. This study was evaluated within this framework.

The first social validity goal, social importance, is demonstrated through a review of current literature establishing that students with significant disabilities have difficulties initiating and maintaining friendships in secondary school environments. Those difficulties are a result of both an inability to learn the skills necessary to successfully build relationships with their peers without disabilities and the segregation that often occurs in secondary school settings, limiting the opportunities available to build those relationships.

Social importance beyond secondary school must also be established. Upon graduation, the most important skill that a student with significant disabilities will want to take to the world of work is an ability to establish and maintain positive relationships with peers and co-workers. When students have the opportunity to be educated in inclusive environments, they learn to generalize the skills needed to be independent across natural settings, thus meeting the requirements for social importance (Kemple, 2007).

The second social validity goal outlined by Horner, et al. (2005) requires that the research design demonstrate that the intervention can be applied by teachers in an educational setting. The current study applied an explicitly taught intervention to two entire classrooms of peers. Other than a lesson plan, augmentative communication devices, and handouts, no special equipment or other means were necessary to implement the independent variable (peer support training). The time necessary for teaching the peer support intervention was not prohibitive. The lessons were taught over a period of two successive 50-minute classroom sessions.

The third requirement for socially valid single subject research is that teachers find the intervention acceptable, practical, and efficacious and that teachers plan to use the intervention as part of their teaching practice. The functional aspect of social validity for this study was conducted using a subjective evaluation. Specifically, the teachers involved directly in the study were asked to complete a survey following the intervention in the classrooms. This survey determined the level of acceptable, practical, and efficacious status of the peer support interventions (see Appendix R). Specifically, the Teacher Satisfaction Survey gathered information on the appropriateness of the training given the current student level of understanding, the amount of planning needed to implement, practicality of implementation,

plans for future use, effectiveness of the intervention, and the observable differences in the proficiency levels of the students (with and without disabilities) who participated in the study.

There are several strengths and limitations to using subjective evaluation (Kennedy, 2005) to estimate social validity in this study. Subjective evaluation allows the researcher to add qualitative information to data gathered through observation. The use of subjective evaluation may broaden the range of dependent variables used in a study. This method of evaluation includes people's perceptions and opinions into the overall interpretation of what has occurred in the study and in the overall results anticipated to have positive effects on the four boys observed in the study. One limitation of this method of evaluation is that the actual questions asked of the participants could be biased toward receiving positive outcomes. The Teacher Satisfaction Survey was piloted with this in mind.

The fourth primary goal of socially valid single subject research should be demonstrating that the intervention will make a difference, as defined by the parameters of the study, for the participants. This study was designed to collect data to answer the question, "Will the occurrence of initiated and reciprocal peer interactions of students with significant disabilities within inclusive physical education classes increase following the provision of formal classwide peer support training?"

CHAPTER FOUR: RESULTS

Research Question

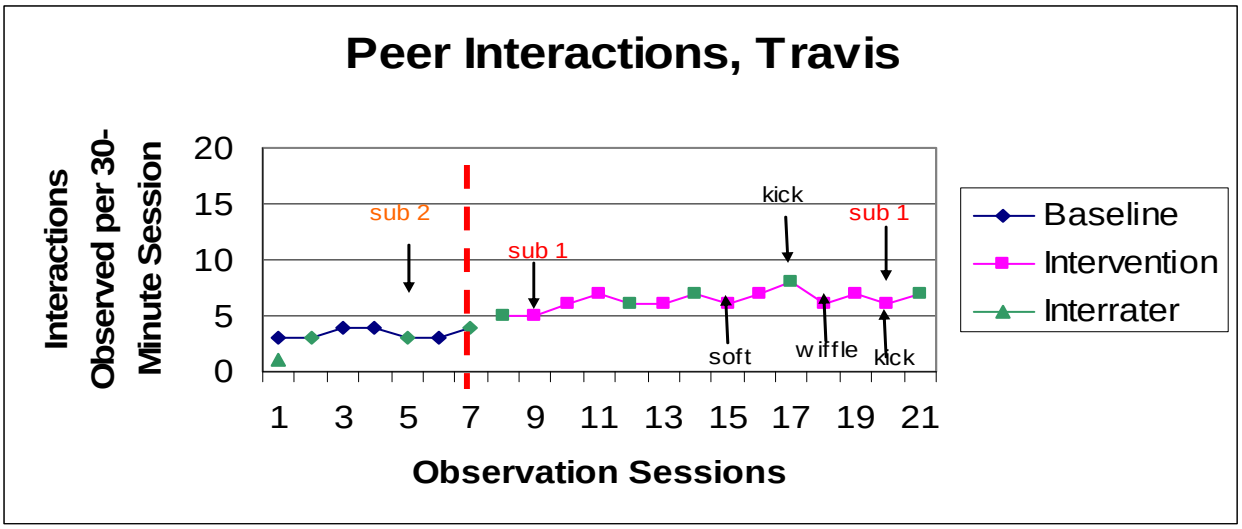
The purpose of this investigation was to examine the impact of the provision of peer support training to two physical education classes of high school students as an intervention for increasing the occurrence of reciprocated and initiated interactions of students with significant disabilities included in those classrooms. This study was designed to answer the research question, “Will the occurrence of initiated and reciprocal peer interactions of students with significant disabilities within inclusive physical education classes increase following the provision of formal classwide peer support training?” The following chapter sections analyze the results of that intervention.

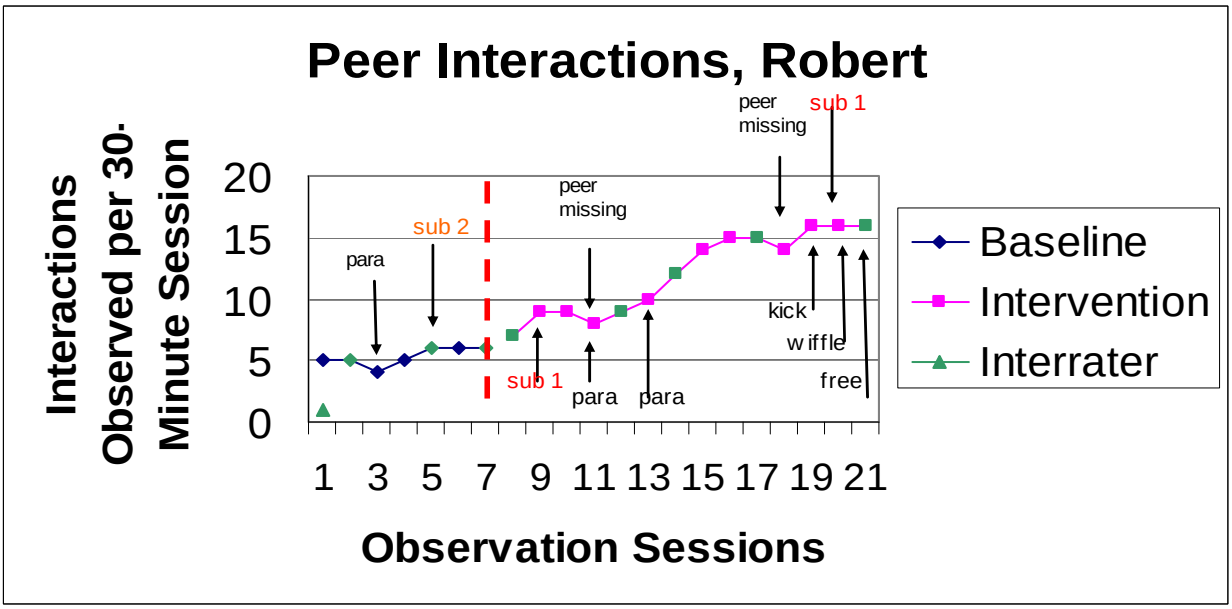
Overview

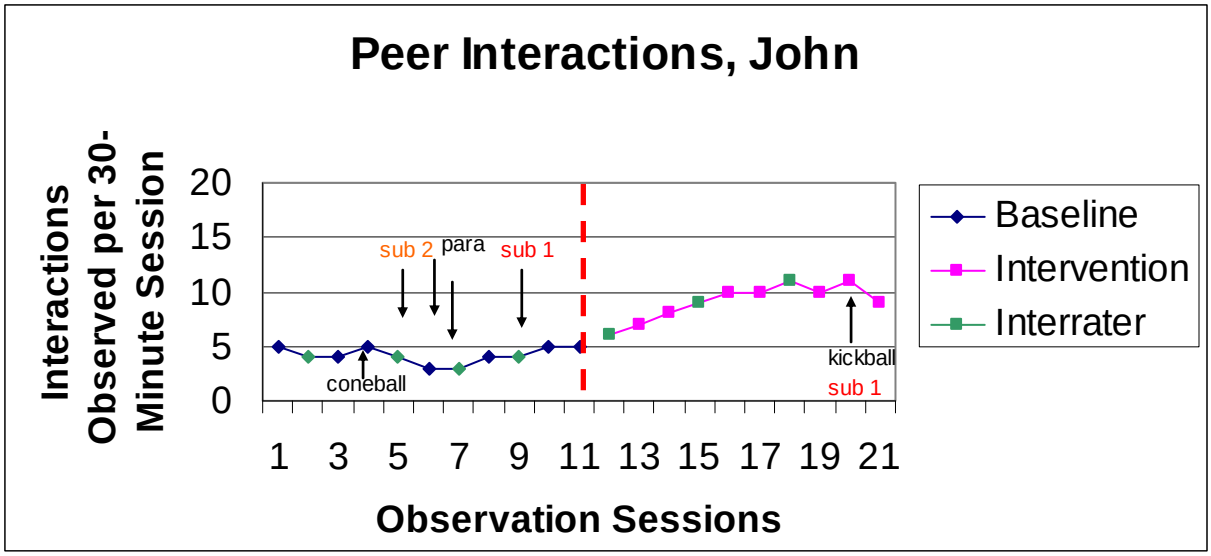
The present study utilized an AB study design to measure the effects of classwide peer support training on the occurrence of reciprocal and initiated interactions of students with significant disabilities in inclusive settings. Thirty-seven students without disabilities in two classrooms were trained in the use of effective strategies to support students with significant disabilities included in their classrooms. Four students with significant disabilities were selected to be observed both prior to, and following, the provision of peer support training to their same-aged peers who were members of the class in which the students with significant disabilities were included. The study lasted for six weeks during which time two classes of high school students were trained separately in the use of peer supports and those students then implemented those supports within two general education physical education classrooms.

Results

Baseline and intervention data is displayed in figure 1.







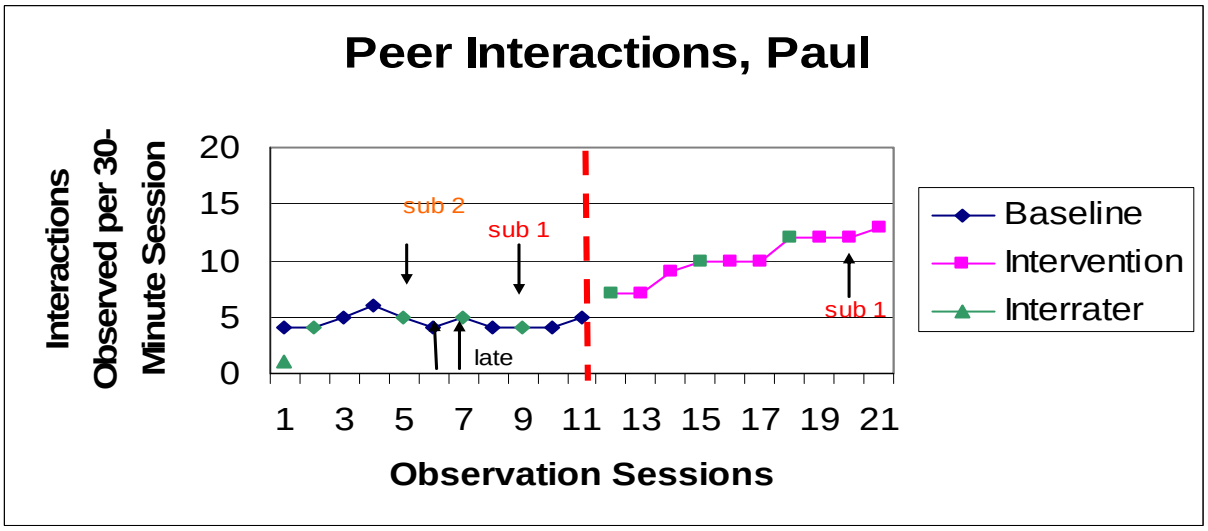


Figure 1 Peer Interactions Observed per Student, Pre and Post Intervention

Visual Analysis of the Data

Figure 1 provides data on the number of interactions observed for each 30-minute observation session during baseline and post intervention for each of the four students with significant disabilities. The students were each observed for a total of 21 sessions. John and Paul attended the morning physical education classroom and were observed during the baseline phase

for 11 sessions and the post intervention phase for 10 sessions. Travis and Robert were members of the afternoon class, the first class to receive the intervention, and were observed during 7 sessions of baseline and 14 sessions during post intervention.

John

A visual analysis of the data in Figure 1 reveals that John was observed to have a range of 3 to 5 interactions (M= 4.18, SD = .751) per baseline observation session. Those interactions increased to a range of 6 to 11 interactions (M= 9.17, SD 1.66) during the time that data were collected following the intervention. After a steady increase daily for 5 consecutive days after intervention, John's interactions maintained to between 10 and 11 with the exception of the final day of observations when he was observed to have interacted with peers only 9 times.

Paul

An analysis of the data in Figure 1 suggests that Paul continued to increase his overall interactions with his peers without disabilities throughout the post intervention time. He had a range of 4 to 6 interactions (M = 4.55, SD = .688) observed and documented during baseline and a range of 7 to 13 interactions (M = 10.50, SD = 2.10) observed during post intervention. Although an increasing trend was still evident at the end of the observation sessions, the study needed to conclude on observation session 21 as the end of the school year had come for these seniors.

Travis

Examining the data in Figure 1, Travis was seen as making the least amount of gain in overall interactions and he stopped making progress earlier than his peers in the post intervention phase. He had a range of interactions observed during baseline of 3 to 4 (M = 3.43, SD = .535) and a range of interactions during post intervention of 5 to 8 (M = 6.25, SD = .842), with the high of 8 interactions seen on session 17, four sessions before the study ended. Travis was the only student of the four primary participants to cease making any further gain after session 17. Session 17 found him involved in a kickball game in which he made a remarkable catch and the peers in the room made a big deal of the catch, involving him in more interaction than had been seen previously. The next school day, session 18, found Travis participating in a wiffle ball game and it was noted that his interaction number was lower than his previous day. In fact, of the 3 days after session 14 in which his interactions were observed as low (sessions 15, 18, and 20) the class participated in either wiffle ball or softball, which required advanced skill in eye-hand coordination.

Robert

In examining the data in Figure 1 on Robert, it is clear that he made the most gain in overall interactions with his peers without disabilities from baseline to post intervention. He was observed to have a range of 4 to 6 interactions (M = 5.29, SD = .756) during baseline, and 7 to 16 interactions (M = 12.06, SD = 3.35) after the intervention had been provided.

Robert's highest documented interactions (16) occurred on the final 3 days of observations. On those three occasions, he was given more of a participating role in each of the classes than he had been given previously. He was the pitcher in a kickball game on session 19,

the first baseman in a wiffle ball game in session 20 (able to greet each student as they arrived on first base), and the "referee" during a pick-up basketball game on the final day of observations when the teacher allowed all of the students to choose their own activity.

Figure 2 is a graphic intended to demonstrate a simple comparison of the mean occurrence of interactions during baseline and intervention. An analysis of the figure shows that, overall, the students all made gains although Travis made the least gain over time with a pre intervention mean of 3.43, (SD = .35) and a post intervention mean of 6.25 (SD = .842) while Robert made the most gain with a pre-intervention mean of 5.29 (SD = .756) and a post-intervention mean of 12.06 (SD = 3.35). All four of the students remained in the same order in total interactions observed; least to most (Travis, John, Paul, Robert). Finally, it is noteworthy to mention that the student starting with the most overall interactions and the student making the most significant gains in overall peer interactions was the student who was most capable cognitively and the least capable physically (Robert) while the student making the least amount of gain was the student who was least capable cognitively and a student who also struggled with gross motor skills, coordination, and the development of peer relationships (Travis).

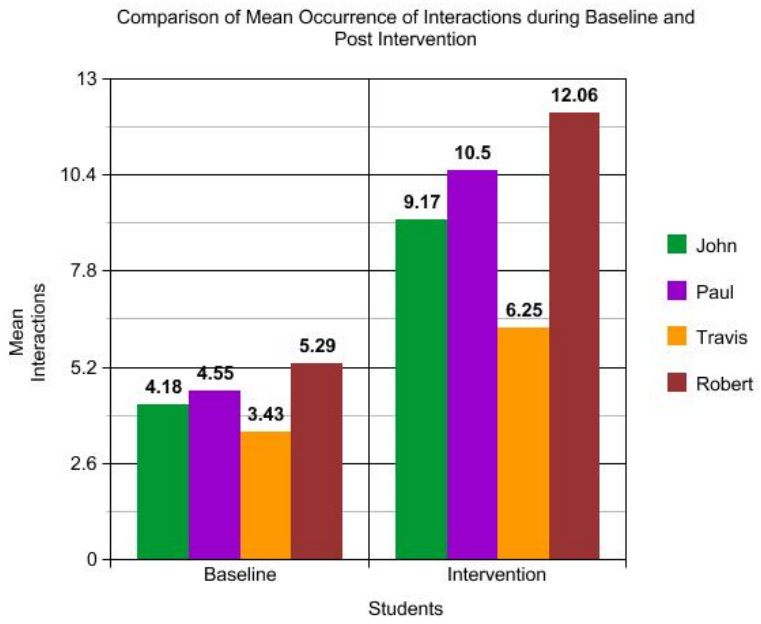


Figure 2 Comparison of Mean Occurrence of Interactions during Baseline and Post Intervention

Percent of Initiated and Reciprocal Interaction

Table 2 offers more specific data related to the percent of the mean interactions reported in Figure 2 as being either initiated or reciprocal. All four of the boys were observed as initiating more interactions than they reciprocated, both before and after the intervention. Paul demonstrated the greatest disparity in his interactions with a 45 point difference between initiated and reciprocal interactions during baseline while Travis was observed to have the least difference in his interactions with a 28.8 point difference between his initiated interactions and his reciprocal ones. In examining post intervention data, the four boys did not stay in their order of greatest to least with initiated and reciprocal interactions. For instance, John was identified as having the second highest initiated interaction percentage during baseline (67.2%) and the lowest percent identified after intervention (54.5%), decreasing his initiated interactions and increasing his reciprocal interactions by 12.7. Overall, the order from greatest initiated and least reciprocal

interactions went from Paul, John, Robert, and Travis at baseline to Paul, Robert, Travis, and John after the intervention.

Table 2 Percentage of Mean Occurrence of Initiated and Reciprocal Interactions; Baseline and Post Intervention

Student	Percent of Baseline		Percent of Post Intervention	
	II	RI	II	RI
John	67.2	32.7	54.5	45.5
Paul	72.5	27.5	66.6	33.4
Travis	64.4	35.6	59.0	41.0
Robert	64.8	35.2	61.1	38.9

Interrater Reliability

Reliability is the extent to which an experiment, test, or any measuring procedure yields the same result on repeated trials. Without the agreement of independent observers able to replicate research procedures, or the ability to use research tools and procedures that yield consistent measurements, researchers would be unable to satisfactorily draw conclusions, formulate theories, or make claims about the generalizability of their research.

Table 3 summarizes the interrater reliability calculated for the one pilot observation, baseline observations, and post-intervention observations from both the morning and afternoon classes. An interrater reliability percentage of 80% was expected for this study throughout each phase. That percentage was reached in each of the three phases identified in the table, with the highest percentage of interrater reliability (92.8) identified during the one pilot

session, and the lowest interrater reliability percentage of 83.5% found in the post-intervention morning classroom. Specifics on those phases follow the presentation of data in Table 3.

Table 3 Summary of Interrater Reliability Percentage, Pilot, Baseline, Post Intervention

Phase of Study	**Reliability**		
Pilot Study	92.8		
		Morning Classroom	**Afternoon Classroom**
Baseline		87.5	89.1
Post Intervention		83.5	86.7

Pilot Observation

After thirty minutes of observing one student included in a science class, the two undergraduate students and the researcher met in the teacher's lounge to review the data collection forms that had just been filled out. There were a total of 120 possible choices to make during each 30-minute observation, 30 yes, 30 possible no, 30 RI, and 30 II. The researcher and the first undergraduate student had marked 113 of 120 possible interactions for an interrater reliability of 94.1%. The researcher and the second undergraduate student had marked 110 of 120 interactions exactly for an interrater reliability of 91.7%. The interrater reliability between the two undergraduate students was 92.5% as they had marked 111 of 120 possible interactions exactly. An interrater reliability of better than 80% (92.8%) was met.

Baseline

Interrater reliability sessions occurred in at least 30% of the baseline observations for students in both classrooms. The baseline data collected in the afternoon classroom (the first classroom to undergo intervention) consisted of seven observations while the morning classroom was observed for four additional baseline observations (eleven total). The afternoon classroom observations had an interrater involved in three of the seven baseline sessions (43%) while the morning classroom had an interrater present on four of the eleven baseline observations (36%). For the morning classroom, interrater reliability was calculated at 87.5% with agreement on 420 of 480 possible behavior occurrences in the four days when an interrater was in the classroom with the researcher. In the afternoon classroom, the interrater reliability was calculated at 89.1% with exact agreement on 321 of the 360 possible behavior occurrences during the three days when an interrater was present.

Post Intervention

The post-intervention interrater reliability data collected in the afternoon classroom occurred during five of fourteen total observations (35.7%) while interrater data collected in the morning classroom occurred during four of the ten total observations (40%). Interrater reliability was calculated at 86.7% in the afternoon classroom with exact agreement on 520 of 600 possible observations within the five sessions where interrater agreement was measured. Interrater reliability was calculated at 83.5% in the morning classroom with exact agreement on 401 of 480 possible observations.

Pre-Post Peer Support Survey

Immediately before the provision of the peer support training, the participating students in each classroom (N = 37) were asked to complete a six-item survey to determine their current knowledge level in the area of supporting peers with significant disabilities (see Appendix M). The survey items addressed whether the students could identify strategies to utilize in the areas of specific activity participation, partial participation, and imbedding and addressing priority goals and objectives within general education instruction. In addition, the survey items addressed the current knowledge level of the students in the use of positive feedback and reinforcement, augmentative communication devices for meaningful participation, and strategies to facilitate the development of peer relations and interactions in ways that provide alternatives to over-reliance on paraprofessionals. Thirty-seven students participated in the pre- and post- tests. The composite mean score and standard deviations for each of the six items are listed in Table 4.

Table 4 Mean Scores from Pre and Post Survey, N = 37

	Pre-test Mean	SD	Post-test Mean	SD	Mean Increase	Percent Increase
Item Number						
1. Specific Activity	2.59	1.233	3.97	.687	1.38	53.3
2. Partial Participation	2.61	1.066	4.16	.701	1.55	59.4
3. Addressing IEP Goals	2.54	1.119	4.22	.616	1.68	66.1
4. Positive Feedback	2.68	1.333	4.40	.594	1.72	64.2
5. Aug.Communication	2.05	.743	3.84	.815	1.79	87.3
6. Overreliance/Paras	2.36	.939	4.02	.726	1.66	70.3

Table 4 provides data of the mean score changes from pre- to post-test. Post-test scores for each item were higher than those recorded for the pre-test. The item with the largest increase in mean score was item 5 (use of augmentative communication), with a mean increase from 2.05 (SD = .743) to 3.84 (SD = .815), or 87.3% while the item identified as having the least mean increase was item 1 (modifying specific components of one activity), which increased from 2.59 (SD = 1.23 to 3.97 (SD = .687), or 53%. The results indicate that the students reported a better understanding of all six strategies presented in the peer support training following that training, specifically the strategies of utilizing positive feedback (4.40 mean score, SD = .594) and

working on priority educational goals within general education contexts (4.22 mean score, SD = .616). The survey utilized a “1-strongly disagree”, “2-disagree”, “3-neither agree nor disagree”, “4-agree”, and “5-strongly agree” Likert scale.

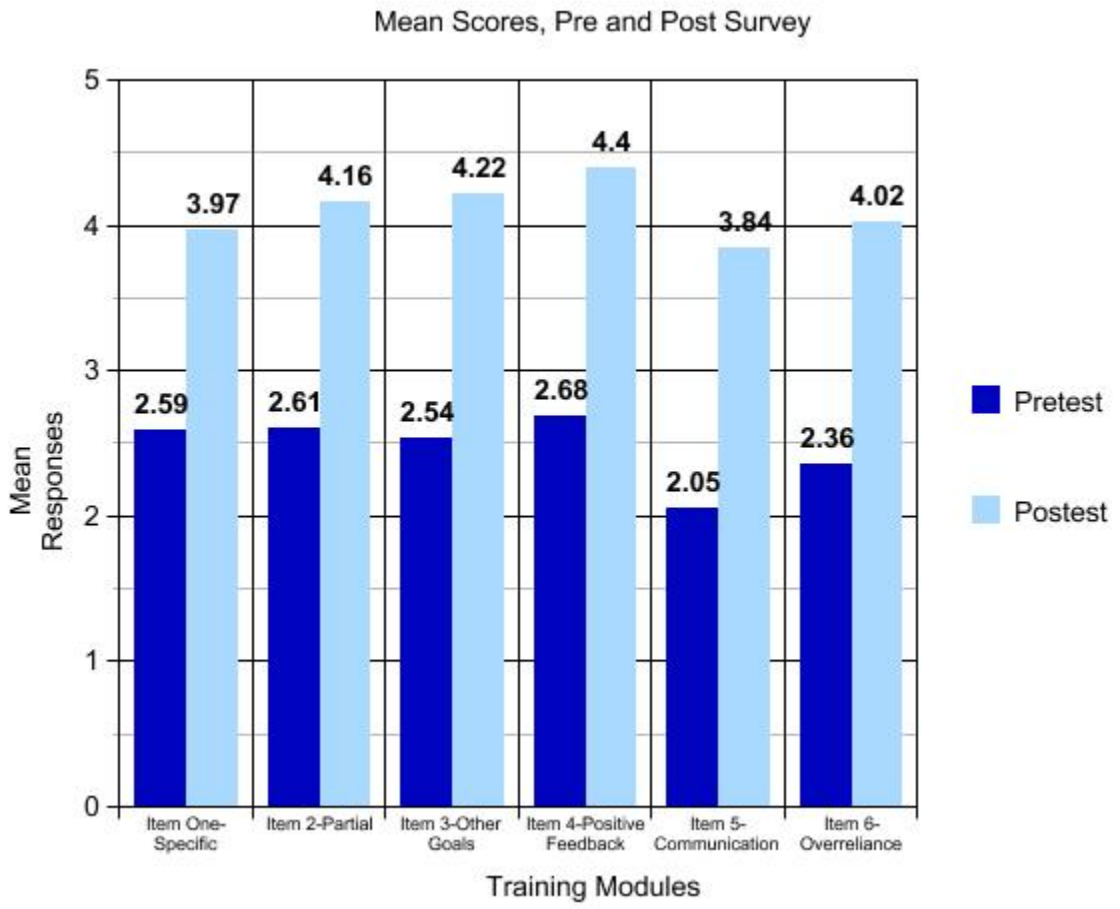


Figure 3 Mean Scores from Pre and Post Student Survey

Figure 3 is a graphic representation of the difference in mean score for the six items addressed in the peer support training. All post test scores increased from an overall mean score of 2.47 before the training occurred to an overall mean score of 4.10 immediately following the second day of the training. The survey utilized a “1-strongly disagree”, “2-disagree”, “3-neither agree nor disagree”, “4-agree”, and “5-strongly agree” Likert scale.

Mean Differences, *t*-test

A Paired Samples t-test was conducted to determine whether the mean differences between the scores of the pretest and posttest were significantly different following the provision of the peer support training. The results indicate that the mean for the pretest scores (M = 2.46, SD = .840) was significantly lower than the mean for the posttest (M = 4.11, SD = .463), t (36) = -11.493, p <.001. The 95% confidence interval for the mean difference between the two ratings was -1.94 to -1.36. This indicates that we can be 95% confident that the mean difference between the two surveys will fall somewhere between -1.94 and -1.36.

Summary of Assessments, Days One and Two

An examination of the results of the paper/pencil assessments given to the students in the morning classroom for both training days showed the students correctly answered 92 of 102 questions (17 students answering six questions each) for a 90.1% accuracy. Students in the afternoon classroom for both training days answered 110 of 120 questions correctly (20 students answering six questions each) for a 91.6 accuracy.

Social Validity

Following the period of data collection after the intervention, a Teacher Satisfaction Survey (see Appendix R) was administered to three teachers who observed the training and spent a significant amount of time either teaching or observing the students both prior to, and following the intervention. The survey addressed a number of variables that contribute to the effectiveness of intervention as it relates to peers supporting students with significant disabilities within an inclusive setting. The teachers were asked to respond to the appropriateness of the

training in relation to current student awareness and their perception of the amount of training time needed for such an intervention. The teachers also responded to statements that addressed practicality of implementation for general and special education teachers and whether they planned to continue to utilize the interventions for future students included in general education classes. Finally, the teachers were asked to respond to statements that examined the overall effectiveness of the training and whether a discernable difference was observed in the comfort levels of the students providing supports and the interaction levels of students with significant disabilities from the beginning of the study to the end. Table 4 identifies the mean of the teacher responses for each item in the survey.

Table 5 Mean Scores from Teacher Satisfaction Survey

	Item 1	**Item 2**	**Item 3**	**Item 4**	**Item 5**	**Item 6**
Teacher 1	5.00	5.00	5.00	5.00	5.00	5.00
Teacher 2	5.00	5.00	5.00	5.00	5.00	5.00
Teacher 3	4.00	4.00	5.00	5.00	5.00	5.00
Total Mean Score	4.67	4.67	5.00	5.00	5.00	5.00

Note: “1-strongly disagree”, “2-disagree”, “3-neither agree nor disagree”, “4-agree”, and “5-strongly agree” Likert scale

The responses suggest that all teachers agreed that the peer support training was developed taking into account the current awareness levels of the students in each of the two classes (Item 1) and that the training would not require a significant amount of planning (Item 2). The teachers all strongly agreed that the training provided to the students was practical to use in various class settings (Item 3) and that they planned to utilize the training and strategies in the

future (Item 4). In addition, the teachers strongly agreed that the training was an effective strategy for meaningful inclusion and noted a discernable difference in the comfort levels of the students providing peer supports (Item 5) and the interaction levels of the students with significant disabilities throughout the study (Item 6). No more than one teacher scored any one item with a score of 4 or lower. Only Items I and 2 received one score of 4, and the rest of the items (3-6) were scored at a 5 for each of the three teachers. Teachers One and Two had an overall mean score of 5 (SD = .000) while Teacher Three had an overall mean of 4.67 (SD = .548).

CHAPTER FIVE: DISCUSSION AND RECOMMENDATIONS

Purpose and Procedures of the Study

The current chapter restates the research question and reviews the methods used in this investigation. The relationship of the current study to current literature is addressed. This chapter articulates the limitations of the investigation and discusses the implications of the research findings. Finally, the chapter concludes with a discussion of the need for future research related to this study.

Research Question

This study was designed to observe the effects of the provision of formal peer support training on the occurrence of initiated and reciprocal interactions of students with significant disabilities in inclusive settings. The current investigation sought to address the research question, “Will the occurrence of initiated and reciprocal peer interactions of students with significant disabilities within inclusive physical education classes increase following the provision of formal classwide peer support training?”

Summary and Implications of the Findings Relative to the Current Literature

A review of literature was conducted to investigate the research and professional literature related to supporting students with significant disabilities through the use of peer supports. The results of the present study are compared to current literature as follows:

John

During baseline, John was seen most often on the sidelines away from the rest of the class, particularly during the time at the beginning of the class when others were changing out. When the P.E. teacher called the students to the center of the gymnasium for attendance, John would slowly walk toward the circle and stop about five feet from it. He would stand on the periphery and listen attentively. John turned out to be a very good athlete and participated in each of the daily activities. When the activity was announced and rules stated, John would take his place in the gym, either on defense or offense or at a certain place on the court. He participated actively in each activity and was often seen with a smile on his face throughout the hour in which he was observed. He did not, however, initiate many conversations with peers he did not know and reciprocated even fewer peer interactions. John had a history of difficulties with peer relationship-building and interacting with peers without disabilities and his participation without interaction was not surprising. His cumulative file identified support needs in the areas of accountability, lying, safety, following directions, respect, and compliance.

John exhibited an increase in his mean interactions with his peers without disabilities following the intervention. John's overall occurrence of interactions increased and the percentage of initiated interactions to reciprocal interactions increased from 67% (II) and 33% (RI) at baseline to 55% (II) and 45% (RI) after the intervention. Since John has struggled with building peer relationships and interacting with peers without disabilities, it was quite an accomplishment for him to increase his reciprocated interactions along with increasing his overall interactions while in the physical education classroom.

John did show gains in his overall interactions with his peers in the morning classroom although those gains were gradual and leveled off somewhat toward the end of data collection. He was seen most often during baseline, particularly during the time at the beginning of the class when others were changing out, on the sidelines away from the rest of the class. This segregation is not unusual as students with significant disabilities are often among the most socially isolated students in secondary schools (Carter, Hughes, Guth, & Copeland 2005; Marder, Wagner, & Sumi, 2003).

John's increase, however, in his overall occurrence of interactions is consistent with research on success rates for students with significant disabilities supported by peers (Cushing, Clark, Carter, & Kennedy, 2003; Giangreco, Halvorsen, Doyle, & Broer, 2004). Students receiving peer support training are more likely to initiate and sustain social interaction with students who have significant disabilities than are students without disabilities who lack similar experiences and training (Carter, Hughes, Guth & Copeland, 2005). The mean occurrence of interactions identified for John supports this contention. The peers in the physical education classroom eventually assumed the primary support role for John. This included paraphrasing the rules of each activity, clarifying instructions given by the physical education teacher, checking for understanding, modifying activity outcomes, offering choices, and supporting partial participation in the activities in the gymnasium.

Peer support strategies have been shown to either maintain or enhance students' engagement within general education contexts. Engagement is defined as attending to ongoing classroom activities or engaging in classroom-related activities closely aligned with those delivered to other students in the classroom, with or without adaptations (Shukla, et al., 1998).

Paul

Paul was late for some of the classes observed and it was later discovered that his tardiness at the beginning of class was often due to his desire to change out in the bathroom adjoining his self-contained special education classroom rather than changing in the locker room with the others in the class. In addition, he was absent for a period of time on one Tuesday and one Friday as his Speech/Language teacher needed to facilitate an assessment as part of on his school-to-work transition.

Paul was accompanied to each of the physical education classes by a paraprofessional assigned to him. That paraprofessional would, occasionally, provide supports for John as well. During baseline, the paraprofessional seldom provided supports for either Paul or John, with the exception of physically accompanying Paul to the gym after he had changed. The paraprofessional assigned to Paul stood, or sat, on the sidelines throughout the entire period of the observation conversing with other staff members who might have been present or with a student who was sitting out a particular activity.

Paul's increased his overall occurrence of interactions in the study (4.55 mean interactions during baseline to 10.50 mean interactions during post-intervention observations). Paul had the second highest overall mean occurrence of interactions, 4.55, of the four students observed during baseline. The overall ratio of initiated and reciprocal interactions did not change as much for Paul (72% (II) and 28% (RI) during baseline and 67% (II) and 33% (RI) during post-intervention observations.

Paul was the beneficiary of purposeful, planned supports in the form of a formal peer support training delivered as a means to increase the occurrence of interactions between students

with significant disabilities and their peers without disabilities. Consistent with previous research (Hughes, Carter, Hughes, Bradford, & Copeland, 2002), this finding supports that unless active, purposeful steps are taken to facilitate social interaction among students with significant disabilities and their general education peers, increased occurrence of those interactions is unlikely to occur, regardless of the level of physical integration or the location of students; in this case the physical education classroom. Additional studies have found that when paired with peers who provide academic and social supports, students with significant disabilities interact more frequently with their general education classmates (Shukla et al., 1999).

Travis

Travis would typically arrive on time or a few minutes early accompanied by a paraprofessional and also chose not to change out in the locker room. While others would wander around and converse with each other or pick up a loose soccer ball or basketball and kick or shoot it, Travis chose to stay near the bleachers and was very seldom seen more than 5-10 feet from the paraprofessional who accompanied him to the class. As each activity in the class began, the assistant would provide Travis with cueing and verbal encouragement to participate. Travis would often join the whole group when attendance was taken and listened from the periphery for instructions. When the physical education teacher asked the class to stretch, Travis would often stretch either by himself or in close proximity with the paraprofessional who was sitting or standing near the bleachers with the other paraprofessional there who supported Robert. Once the stretching was completed, Travis would often walk or jog by himself or alongside Robert. If a student walked by him he would, occasionally, initiate a conversation or respond to that peer but those initiations usually consisted of one word and were done with his head down and without

eye contact made. Once the actual activity began, Travis would typically take a position that placed him in a place on the court where he was not near any peers. He was extremely uncoordinated and avoided most physical activities like swinging a bat, kicking or catching a ball, or running to avoid being hit with a nerf ball during coneball. Travis would often attempt to seclude himself at the far end of the gym, standing and watching and only occasionally participating if a ball came near him or when the action came his way. These avoidance tactics kept him away from many opportunities to have to catch or throw a ball but also seemed to physically isolate him from the many strategies the students trained in peer supports were employing in the gym. This made the researcher reconsider some of the future training components that could include the issue of seclusion as an area to address.

Although Travis' overall occurrence of interactions with his peers did increase from the baseline observations to the observations done following the intervention, those increases were less than those observed for the other three primary participants. As the study progressed and the peers trained in the provision of peer supports began to interact more with Travis, he did increase his overall interactions.

After the intervention, Travis continued to position himself in places in the gymnasium where he would have minimal contact with others and where he would be less likely to have to catch, throw, or kick a ball. On a few occasions where he did encounter a ball, he would start out after it and then look around to see if another class member might be going after it. If he saw another classmate heading for the ball, he would stop and watch that student retrieve it and throw it to a teammate. Each time he would make any kind of attempt to go after a hit or kicked ball,

his peers would say “Nice try, Travis” or “Good hustle, Travis” whereby he would smile and stare ahead or down at his feet.

Toward the end of the post intervention observation sessions, however, Travis had become slightly more involved in the activities, particularly in coneball and kickball. On one of the last days that observations occurred at the school, Travis was playing right field in a kickball game. Throughout most of the game he was virtually unnoticeable as he stood in the field. However, he did get in line to be a kicker when the teams switched from defense to offense. This was the first time that Travis had voluntarily decided to participate as Travis would typically stand to the far left of the stage and watch the others kick in turn. His kicks were weak but he did run the bases and scored a few runs, providing additional opportunities for the peers to congratulate him, which they did.

It was an incident in the field, however, that was most indicative of the strides that Travis had made by the end of the observation sessions. A ball was kicked to him in right field and he stepped two feet to his left and raised his hands to catch it. In all situations previously where this had occurred, Travis either eventually backed off from trying to catch the ball or would not be successful in catching it. This time, he caught the ball and the look on his face was one of astonishment followed by a smile. His teammates all made a big deal of the catch as he continued to smile.

Travis showed the least gain in overall peer interactions from the start of baseline to the end of the study (3.43 mean interactions per 30-minute interval during baseline to a 6.25 mean interactions during post-intervention) for a variety of reasons. He has been diagnosed with Autism Spectrum Disorder and with a Non-Verbal Learning Disorder and is very uncoordinated.

The characteristics associated with each of those disabilities made it very challenging for Travis to participate in many of the activities in the physical education class. In retrospect, Travis would have benefited from individual instruction in specific skills that would provide him with needed strategies to effectively interact with peers without disabilities, a struggle of his for a number of years. That training would not only include the social skills needed to successfully interact with other classmates but the physical, gross motor, and communication skills needed to successfully participate in the various activities in the physical education classroom. The provision and monitoring of these prerequisite skills is consistent with previous research that has supported the importance of having the needed skills available for use when a student with significant disabilities is placed in an inclusive environment (Brozovic, Stafford, Alberto, & Taber, 2000; Hunt, Soto, Maier, & Doering, 2003).

Additionally, Travis would have benefited from further changes in the overall structure of the learning environment. A considerable body of literature establishes that effective inclusive education for students with significant disabilities requires substantive changes in the structure of the classroom, a different conceptualization of professional roles, and a continuous need for collaborative teaming (Hunt & Goetz. 1997; Rainforth & York-Barr, 1997). Many of the games required a considerable amount of competition and physical skill while far fewer focused more on teamwork and collaboration.

Finally, Travis may have been negatively impacted by having a paraprofessional assigned to him who did not have the skill sets to establish limits for him and to utilize strategies and supports necessary for Travis to take risks and spend more quality time with his peers without disabilities. In reviewing the anecdotal notes taken throughout the study, in many cases

the paraprofessional was within 5-10 feet of Travis. The paraprofessional allowed Travis to avoid many activities and may have created a very dependent young man who instinctively looked to him before considering any activity.

Robert

Robert's baseline data demonstrated he increased his interactions more than the other four boys in interacting with peers without disabilities (he had the highest mean occurrence score of the four boys observed during baseline; 5.29). For the first few observations done during baseline, Robert would enter the gymnasium in his wheelchair, often 3-4 minutes early, followed closely by the paraprofessional assigned to him. He would stay seated near the entrance of the gymnasium while others came in individually or in small groups. Robert would occasionally ask his assistant a question or might greet a student near him but a significant speech impairment made it difficult for all but the paraprofessional to determine what he was asking or saying. After a few sessions of baseline, Robert would wheel his chair over to the researcher upon arrival. Robert knew the researcher as he had attended the training the researcher had done. On the first occasion Robert approached the researcher, he asked what the researcher was doing. The researcher replied that he was going to watch the class and see how everybody interacted with each other. Eventually, Robert asked to see the researcher's clipboard with the data collection sheets attached and it was handed to him. On another occasion, Robert, who wears glasses, imitated the researcher, who often placed his glasses on top of his head as he entered information on the data collection sheet, by putting his own glasses on top of his head and stating "You're copying me!"

On another occasion during baseline when a substitute took over the class, Robert wheeled up to the substitute, who was sitting near the entrance to the gym, and asked if he could see his attendance sheet so he could place a check next to his name to indicate that he was present. Robert appeared to be quite social and capable of communicating with others but limited his initial interactions primarily to adults.

Robert was clearly the primary participant who benefited most from the intervention. After the intervention, Robert was less likely to gravitate immediately to an adult (researcher, paraprofessional, teacher) and more apt to start a conversation with a peer. He increased his initiations of conversations with the students in the class and was typically the first student of the four primary participants to join a group of students without disabilities while they stretched out or jogged around the gym floor. After intervention, he was increasingly conversant during the games played and the peers without disabilities increased their interactions with him as well. He also became increasingly more involved in the physical aspects of the games played toward the end of the observation sessions.

Two occurrences during this time following intervention demonstrate the impact of Robert's increased involvement with the class. One occasion was during a wiffle ball game. Robert's assistant informed the researcher that Robert had never participated in the hitting part of the game; he had never been pitched to and had never been able to hit the wiffle ball or wheel around the bases. On this occasion, he was wheeled up to home plate and the physical education teacher replaced the student pitcher and pitched to him. After about five missed swings, Robert hit the ball down the third base line and a peer on his team pushed his wheelchair down to first

base. Robert looked over at his paraprofessional standing on the sidelines, smiled broadly, and said “I love this!”

Another occasion where his increased involvement produced a positive outcome for all was when Robert was participating in a kickball game. His peer standing next to him at third base pushed his wheelchair to the pitchers mound and stated that Robert would now be pitching. Robert then was handed the large nerf kickball, leaned over to his right and over the rail of his wheelchair and rolled the ball to the opponent’s kicker. Robert pitched the ball to five or six kickers before another peer asked to pitch. He pitched a few balls that went too far right or left and a participant from the other team was heard to say “Get Robert back in there, at least he can get the ball over the plate!”

As the study continued, Robert increased his overall interactions, became more involved in reciprocal interactions, and became a meaningful part of what was happening in the gym with the rest of the students in the class. Peers supporting Robert were able to identify a number of partial participation activities, work on his priority educational goals on his IEP (communication), and assist him in becoming an active participant in what was happening in their classes.

Finally, the peers without disabilities were able to use Robert’s augmentative communication device on a number of occasions to assist him in participating when communication was necessary during some activities. They programmed the device on one session to say “Can you push me around the bases after I kick the ball?” and on another occasion programmed his device to say “This is fun, I hope we can play this game again tomorrow!” The use of such devices have been shown to be an effective strategy for students with significant

communication issues to gain access to activities in inclusive settings (Lancioni, O'Reilly, & Basili, 2001)

In-Class Variables Impacting the Study

After spending more than 42 hours observing the four students with significant disabilities as they increased their initiated and reciprocal interactions with their peers without disabilities, a number of unanticipated variables were noted that bear mentioning. These variables included school environments, support personnel and student behaviors, school policies on substitute roles and responsibilities, and characteristics of certain games chosen for participation. The variables identified may impact future studies involving the use of peer supports for students with significant disabilities.

Over and Under Supporting by Paraprofessionals

The most commonly used approach for supporting students with significant disabilities within general education contexts involves the assignment of individual paraprofessional supports. Prior studies (Causton-Theoharis & Malmgren, 2005; Cushing & Kennedy, 1997; Kennedy & Itkonen, 1994; Kennedy et al., 1997; Shukla et al., 1998, 1999) have shown that receiving support exclusively from paraprofessionals in general education classes is associated with substantially diminished levels of peer interaction and engagement among students with significant disabilities. In addition, the paraprofessional support tends to block social, and other learning opportunities that occur in the general education environments (Gerber, Finn, Achilles, Boyd-Zaharias, 2001; Giangreco, Broer, & Edelman, 2001; Hemmingsson, Borell, & Gustavsson, 2003; Mueller, 2002).

After the training occurred for the students in each of the two physical education classes, the two special education teachers discussed issues related to the paraprofessionals supporting the primary participants involved in the study. Since the students with significant disabilities being observed in this study were often accompanied to the physical education class by paraprofessionals, the special education teachers felt the students providing the peer supports now realized that the paraprofessional was not necessarily attached to the student with significant disabilities and there were appropriate ways to ask those students to participate in the class activities and peers could then become the primary supports. Throughout the research study it became apparent that the three paraprofessionals supporting the four boys involved in the study were being utilized in an inconsistent manner. In fact, there were a number of sessions in which they were simply not needed at all.

The paraprofessional who accompanied Paul to the morning physical education classroom shadowed him for the entire school day. In addition, she would assist with John when needed. A review of the anecdotal notes taken during data collection show that the paraprofessional spent a great deal of time with John on sessions 6 and 7 as Paul was either late or was involved in some testing with the Speech Language Therapist. On those two occasions, John was observed to have had the lowest number of interactions of all of the baseline and post intervention observation sessions in the study. The over-involvement of the paraprofessional coincided with lower rates of interaction, which is supported by previous research (Giangreco & Doyle, 2002).

Paul's paraprofessional arrived with him daily at the gymnasium, watched him walk onto the court to participate in the activity of the day, then stood or sat on the sidelines for the entire

period without being involved in any support strategies. In fact, the supports provided by the peers and the physical education teacher were sufficient for Paul. This paraprofessional was asked if it would be possible for her to accompany Paul to the gym and then return to another location in the school to provide support for other students and she responded that she did not know if that would be possible. Regardless, sitting for an entire hour without directly providing supports to any students was not an efficient use of her time or skills.

The paraprofessional assigned to Travis in the afternoon classroom is a male who is very soft spoken and reserved. He arrives at the gymnasium with Travis every day and spends most of his time during that class on the sidelines for the entire hour. On the few occasions when Travis could not, or would not, participate in the activities and stood alone at one of the far ends of the gymnasium, the paraprofessional walked slowly to his position on the court and spoke softly to him, attempting to re-engage him in the activity. Some of the time he was successful but there were times when his interventions did not lead to re-engagement and Travis would, instead, go to the sidelines and sit by himself for an extended period of time. The paraprofessional did not seem to have knowledge of effective engagement strategies that could have been utilized to re-involve Travis in the activity on the gym floor such as Positive Behavior Supports, positive reinforcement, reward strategies, or choice-making. Once the peers began to involve themselves more often with Travis after the intervention, his paraprofessional had fewer opportunities to be involved in any behavioral or motivational interventions.

The responsibilities of the paraprofessional assigned to Robert were mostly related to physical and communication supports. Robert uses a wheelchair to access the gymnasium. He does have a significant speech impairment and occasionally utilizes a Go Talk to communicate.

The paraprofessional would allow Robert to wheel his chair out on the gym floor. Robert would often initiate conversation (usually playful teasing) with peers. After the physical education teacher would take attendance and announce the activity, Robert would wheel his chair around the outside of the court as others were walking. Robert was much slower than those walking and would try to wheel a bit faster as the students shifted from a walk to a jog. Occasionally, a peer would step behind his chair and push him along. When it was time to stretch, the paraprofessional would wait for Robert to lift himself out of his chair and transfer onto the floor. She would then move his chair out of the way while he stretched, usually with a small group of peers without disabilities. Although Robert would reciprocate a greeting from Travis when it occurred, he often made every attempt to position himself with the peers without disabilities.

When the day's activity would begin, the paraprofessional would bring the chair back to Robert and allow him to transfer himself back into the chair and snap his safety belt before she left him and walked back to the sidelines. Although those are all important supports to be providing, it is conceivable that, legal ramifications aside, the same supports could be provided by the physical education teacher or Robert's peers. Other than the supports listed above, Robert's paraprofessional sat on the sidelines throughout the hour-long observations. On the three occasions where the paraprofessional spent the majority of the session in close proximity to Robert, which were sessions 3, 11, and 18 respectively, Robert's number of overall interactions decreased from the previous day's total.

Inconsistent Supervision

The physical education teacher was present during all but three of 42 observations done at the high school. Those observations included 21 morning class observations and 21 afternoon class observations. The physical education teacher expected the students to treat each other with respect and participate fully in the activities that he chose for them. The exceptions noted were when Travis chose not to participate in some of the activities requiring the use of gross motor skills (kicking a pitched ball, hitting a wiffle ball with a bat). The students in this teacher's class are expected to follow the rules of the games played and participate right up to the final bell. On two of the days where the regular physical education teacher was absent, a substitute covered the classroom for both morning and afternoon sessions. Although he was not as forceful and structured as the regular physical education teacher, he followed the lesson plans throughout most of the session and would allow the students to end the assigned activity early and participate in free play for approximately the last 15 minutes of the session. When that occurred, the students in the class tended to break up into peer groups, which would often leave John and Travis on the periphery of their respective classrooms and uninvolved in peer interactions. Paul would often stand and watch others during unstructured times. Robert was the least affected by this occurrence and, toward the end of the study, often sought out peers without disabilities participating in a variety of activities. On the first day the substitute teacher replaced the physical education teacher (session 9), John, Paul, and Travis were not able to increase their interaction numbers from previous days while Robert actually increased his interactions from 7 interactions to 9. On the second day this substitute was at the high school, (session 20), John actually

increased his interactions by one from the previous day but Paul, Travis, and Robert either maintained or experienced decreased interaction numbers.

A second substitute took over for both classes on session 5. The entire session was free choice. In the morning classroom, John and Paul immediately went to a basketball rim on the side of the gym and shot baskets with the paraprofessional assigned to Paul. In the afternoon classroom, the same scenario played itself out for Travis, who went to the sidelines to join the paraprofessional sitting by himself. Robert became involved in a half-court basketball game by positioning his wheelchair at the foul line and the students playing the game would occasionally give him the ball so he could then pass it to his teammates. He did not need the structure of a planned activity to access the supports and company of his peers without disabilities but the other three students clearly did. Overall, the number of interactions observed to be happening for John, Paul, and Travis all decreased from the previous day while Robert increased his interactions during session 5 with his involvement in the pick-up basketball game. The implications of this data would suggest that additional information should be included in the training sessions provided to peers or used to make policy decisions related to the roles and responsibilities of substitutes hired to work in schools.

Absent Peers

Although the researcher observed a number of students involved in providing both social and physical supports to the students with significant disabilities in both classes, there were about three or four students in each class who were more involved in providing various supports to the four boys in the two classrooms. In the morning classroom, when one of those students was not present, it limited the number of peers who might provide supports throughout the

session. In the afternoon classroom, the absence of certain students was more noticeable with Robert, who uses a wheelchair and needs more significant physical supports. Two or three students would hand Robert a nerf ball during coneball, push his wheelchair around the bases during kickball or wiffle ball, or stand next to him during a volleyball match. When one of those students was not present, it limited the opportunities for supports to occur. The impact of the absence of a certain student was especially obvious for Robert, who was becoming more actively involved in the activities of the classroom but needed substantial physical supports from his peers for this to be accomplished. During sessions 11 and 18, one particular student was absent. That student, a very muscular young man with excellent athletic ability, seemed to be the first one to grab Robert's wheelchair and push it where it needed to be, whether it was a kickball game, a volleyball match, or trying to escape during coneball. Although others provided support for Robert fairly readily, this particular student's absence coincided with a decrease in interactions for Robert from his previous day's count. Implications of this data would suggest that the overreliance on one particular student should have been a component of the initial training received by the entire classroom with an emphasis placed on the importance of numerous students being actively involved in supporting students with significant disabilities.

Voids in the Activities

Many of the games chosen by the teacher were ones in which the students expressed a desire to participate. A game like volleyball keeps everyone active and communicating with each other and it is played in a rather small, confined section of the gym where everyone is in close proximity. Additionally, the coneball activity kept most everyone moving and interacting and provided numerous opportunities for conversation and proximity. However, certain activities

within games were not as conducive to interactions with peers. For instance, when a student (any student) was in the outfield during kickball or wiffle ball, they tended to stand around for long periods of time not interacting at all. Conversely, if a student was playing another position in the infield, like first, second, or third base, they had numerous opportunities to interact with peers on their team or peers standing on one of the bases. In the coneball activity, it was possible to stand at the end of the gym and guard the cones from being knocked down and students involved in this area of the gym were minimally involved with other peers.

It is recommended that purposeful positioning be planned in order to have students with significant disabilities placed where the ultimate opportunities for interaction exist. For instance, on the next to last day of the study (session 20), Robert's teammates allowed him to roll the kickball from his wheelchair and "pitch" to some of the kickers on the other team. Robert had the opportunity to greet each student as they prepared to kick the ball and to congratulate his own teammates for good plays. Robert had the highest occurrence of interactions recorded anytime during the study. Just two days prior to this (session 18) in a wiffle ball game, Robert had been wheeled in his chair to a spot about 20 feet in back of third base with limited opportunities to interact with any of his teammates and his number of interactions was lower. During session 20, after Robert "pitched" to a few more kickers, another student took over the pitching duties, rolled a few off-line pitches, and Robert's teammates were heard to say "Maybe Robert should pitch again!"

John's highest interaction counts in baseline (session 4) and post intervention (session 20) occurred when the class was playing coneball and kickball, where more cooperative activities existed. Paul also had more success in these two sessions as he benefited from the structure of a

game that was less competitive and more cooperative. Considering Travis' struggles with social cues and communication related to his Autism, those two sessions were not, in fact, helpful for him. He benefited, instead, from times when there was more time spent with informal activities (sessions 14 volleyball and 19 kickball).

Peers "Too Accommodating"

Informal anecdotal information gathered during the study identified times that some of the students were actually over-accommodating the students with significant disabilities during certain activities. If Travis, who is very uncoordinated, would miss a ball hit or kicked to him, the others would congratulate him for a good try but those congratulations at first seemed contrived and overwhelming and not the kind of encouragement that you might hear given to other peers. When Paul would kick the ball to an opponent who could have easily tagged him out, the opponent would, instead, allow Paul to run to first base. Paul would eventually be allowed to run to each base even if tagging him could easily be done at each base. As important as it is, at times, to modify activities and outcomes to allow students with significant disabilities to meaningfully participate, it is also equally important to teach the rules and outcomes of the game and have students adjust to situations such as not reaching first base or missing a ball hit to them, as this will happen as a natural part of participation.

Secondary Participant Satisfaction

The physical education teacher and special education teachers all agreed that a number of substantial benefits had been observed for the students with significant disabilities (see Appendix J and K). The social-related benefits of peer supports for students with significant disabilities were especially evident during the observations in both classrooms and those benefits are

supported by previous research examining the impact of different placement models on social outcomes of children with significant disabilities (Fisher & Meyer, 2002; Kennedy, Shukla, & Fryxell, 1997). Similarly, the teachers stated that classrooms that have students with significant disabilities included benefit the students providing the peer supports by increasing their understanding of disability-related issues and by fostering personal growth, a finding supported by students themselves in related studies (Copeland, Hughes, Carter, Guth, Presley, Williams & Fowler, 2004; Fisher & Meyer, 2002).

Increasingly, researchers and practitioners are calling for new support models that enable students with significant disabilities to access fully and demonstrate progress within the general curriculum (Cushing, Clark, Carter, & Kennedy, 2003; Giangreco, Halvorsen, Doyle, & Broer, 2004). Peer support strategies have long been utilized to improve outcomes and social interactions of students with and without disabilities, especially students with milder disabilities. Peer supports as an intervention to increase the occurrence of initiated and reciprocal interactions utilizes peers as the primary instructional interventionist. As students with significant disabilities increasingly are spending more of their school day in general education classes alongside their classmates without disabilities, peer support strategies are being recognized as an especially promising vehicle for promoting full participation and success in school. The involvement of peers without disabilities increasingly is a core element in many intervention packages used to support students with significant disabilities within inclusive secondary classrooms (Downing, 2005; Gilberts, Agran, Hughes, & Wehmeyer, 2001; Kennedy, Cushing, & Itkonen, 2004; Kennedy & Itkonen, 1994; Kennedy, Shukla, & Fryxell, 1997; McDonnell, Mathot-Buckner, Thorson, & Fister, 2001).

Recommendations for Practice

Staff Acceptance

Peer support arrangements offer an effective and feasible approach for promoting access to and progress within the general curriculum for students with significant disabilities and overall inclusive opportunities for this population of students. However, the overall effectiveness of these interventions will always remain limited unless the strategies utilized are an integral part of the overall educational philosophy and the educational programming is guided by careful planning, collaborative teaming, relevant curriculum, and sound instruction. Implementation of educational practices like peer supports relies heavily on school staff's acceptance of those practices. Therefore, failure to understand stakeholders' perceptions of the value of peer supports could impact efforts to increase general education participation of students utilizing those supports and lead to staff rejection of the use of peer supports for those students with significant disabilities (Schwartz & Baer, 1991; Snell, 2003). A clearer understanding of the perceptions of school staff regarding the goals, process, and outcomes associated with including students with disabilities in general education contexts has the potential to yield information regarding program viability and offer greater understanding of factors that may influence educators' placement and programmatic decisions. Although studies have examined this issue (Scruggs & Mastropieri, 1996), additional research is needed to address several limitations of this literature as identified above.

Staff Training

Before a student is included in a general education classroom, it is imperative that sufficient training be provided for all stakeholders. Teachers have identified the need for training in instructional strategies that would help them be more effective in meeting the needs of a student with more significant disabilities included in their classes. Support staff also benefit from having more specific information about individual student needs and abilities. Identification and utilization of supports from the special education teacher are also important training components of successful inclusive education. Additionally, collaborative efforts among educators are typically identified as being key component of a successful inclusion program at a school Finally, general educators have identified a need for training in specific curriculum adaptations and instructional strategies as well as appropriate ways to accurately measure the student learning for students with more significant disabilities (Downing, Eichinger, & Williams, 1997; McLeskey, Henry, & Hodges, 1998).

Paraprofessional Need and Roles

Training efforts should also include a component for the identification of the need for paraprofessional supports and the roles and responsibilities of a paraprofessional in inclusive settings. In this study, three paraprofessionals (two in one classroom and one in the other) were often not needed to support the four primary participants in the physical education environment. It would seem that a review of needed supports using a matrix of the curricular, behavioral, social and physical expectations for each student could occur that would include input from the special education teacher(s), the physical education teacher, and the three paraprofessionals.

Priority support needs for each student should be identified and a determination should be made as to how much paraprofessional support is actually needed in the gymnasium during each class period. This is an effective strategy not only for this school but for all schools. The results of a support needs review could identify key times when the paraprofessionals assigned to the three students would, instead, be assigned to other classrooms around the school to provide needed supports to other students while the students with significant disabilities are sufficiently supported by the physical education teacher and the peers. From a procedural standpoint, if the assistants are actually written into the Individual Education Plans (IEPs) of each student, an IEP review would need to occur to change the language to provide flexibility in the intensity of supports needed and allow the paraprofessionals to utilize their time more efficiently and support many more students throughout their day. Paraprofessionals should be assigned to schools, not students, and schools can then place those paraprofessionals to meet specific student needs, utilizing scheduling strategies that provide direct supports when necessary and allow for more independence at others.

Once a legitimate need for paraprofessional supports is identified, training on effective strategies to successfully include students with significant disabilities in general education settings must occur. In a case study by Dymond, Renzaglia, Rosenstein, Chun, Banks, Niswander, (2006), paraprofessionals stated that they did not feel comfortable supporting students in general education settings and they required considerable training to make the necessary adaptations. In some educational environments, therefore, unless key personnel are adequately trained, support may not necessarily enhance the goals of inclusive learning.

Sustainability of Peers Supporting Peers

As educators establish and maintain successful peer support arrangements, it will be important to consider factors that initiate and sustain the involvement of peers without disabilities as peer support interventions are implemented. The reasons that certain students serve as peer supporters can come from multiple sources, including previous experiences with classmates with disabilities, existing relationships with classmates who have disabilities, encouragement from teachers, or academic feedback from certain adults. However, what sustains the involvement of peers providing supports may be quite different from what initially attracts them to these support roles in the first place. Understanding these variables may offer one key to facilitating meaningful, lasting relationships that spread beyond the classroom or school.

Peer support strategies are one of a number of supports leading to meaningful general education participation and should be considered alongside other individualized support strategies such as modified outcomes, related services, and other classroom-level practices that are likely to enhance students' academic and social success. Cushing, Clark, Carter, & Kennedy, (2005) examined ways to determine how peer support interventions could be combined with other instructional, social, and behavioral support tactics to ensure that students with significant disabilities participate meaningfully in the general education curriculum. Similar instructional planning models have been described in other studies (McSheehan, Sonnenmeier, Jorgensen, & Turner, 2006; Wehmeyer, Lance, & Bashinski, 2002).

Peer support interventions are most effective when strategies are tailored in response to the collection and examination of formative data. The decisions made about the extent to which

peer support strategies are enhancing a particular student's participation and progress within the general curriculum must be determined individually on the basis of ongoing, systematic data collection. Research suggests, however, that data-driven decision-making is either done infrequently or when it is done, is often poorly implemented and monitored (Arnold & Serpas, 1993; Sandall, Schwartz, & Laeroix, 2004).

Recommendations for Future Study

The initial research findings of this study suggest that the provision of peer support strategies to an entire class of students may increase the occurrence of initiated and reciprocal interactions of adolescents with significant disabilities. Systematic replication of these peer support strategies could improve the understanding of how these supports work, more accurately identify the students benefiting most from them, and hone in on the conditions in which these intervention strategies work most effectively. Although the peers providing supports were participating in physical education classes, the strategies of specific activity participation, partial participation, addressing priority educational goals within inclusive contexts, using positive feedback, incorporating augmentative communication devices, and facilitating the development of peer relations and interactions in ways that provide alternatives to overreliance on paraprofessionals can be effective at providing meaningful participation in all curricular and non-curricular settings. The successful replication of these six strategies could be critical as the field looks at developing and implementing intervention strategies that have impact and are feasible and acceptable to the education community at large in supporting students with significant disabilities in inclusive contexts.

Identifying and Monitoring Optimal Supports

Peer support interventions are most successful when those monitoring the intervention supports are careful about identifying the students who will participate in the study, the settings where the supports will be provided, and the training to be presented. School staff must also monitor the strategies being utilized and provide feedback to the students providing the supports. Each aspect of these interventions, whether individual or in combinations, could impact the long-term effectiveness of the training and the occurrence of initiated and reciprocal interactions of students with significant disabilities in unique ways. School personnel must always look to refine these interventions to assure ongoing effectiveness. To assure that the peer support strategies are both feasible and acceptable, ongoing intervention evaluation must be done to determine which intervention variables and configurations are essential and desirable (e.g., P.E. games based on collaboration and teamwork), and which variables lead to less effective results (e.g., students isolated due to game structures, absent peers, less structured activity time). The information gathered from such monitoring and follow-up can provide educators and other support staff with important information about how best to create peer support arrangements for individual students in specific classroom contexts.

Monitoring the supports provided to students with significant disabilities in inclusive environments while also assuring that those supports are delivered by peers is the most effective means to ensure mastery of skill development. Shukla, Kennedy, and Cushing (1998, 1999) compared the effects of peer-delivered versus adult-delivered support on the social interaction of students with moderate to profound intellectual disabilities and their general education peers. In the peer-delivered support condition, general education peers adapted certain student

assignments, provided systematic instruction related to the student's Individualized Education Program (IEP) goals, facilitated socialization with classmates, implemented behavior support plans, and sat near the students with significant disabilities, all under the supervision of the special educator. In the adult-delivered support condition, the special educator, rather than a general education peer, directly supported these various activities. The peer-delivered support condition was associated with more frequent and longer durations of social interaction than the adult-delivered support condition. Moreover, Shukla et al. (1999) showed that a greater variety of social support behaviors were exhibited during the peer-delivered support condition.

Figure 4 demonstrates the cycle of peer support monitoring utilized by many schools and districts implementing inclusive services for students with disabilities (Weidle, Bolme, & Hoeyland, 2006). Schools first focus on the identification of students to provide supports and look at each setting where supports will be provided. Once students have been identified and settings have been chosen, support teams then focus on the identification of training that meets the individual support needs of the students with disabilities. Finally, support team members monitor the interventions to assure ongoing effectiveness and individual team members provide ongoing feedback to those who are supporting students with disabilities in inclusive settings. After the monitoring of effectiveness and provision of feedback determine the overall effectiveness of the training, additional groups of students and settings are chosen and the cycle of support continues.

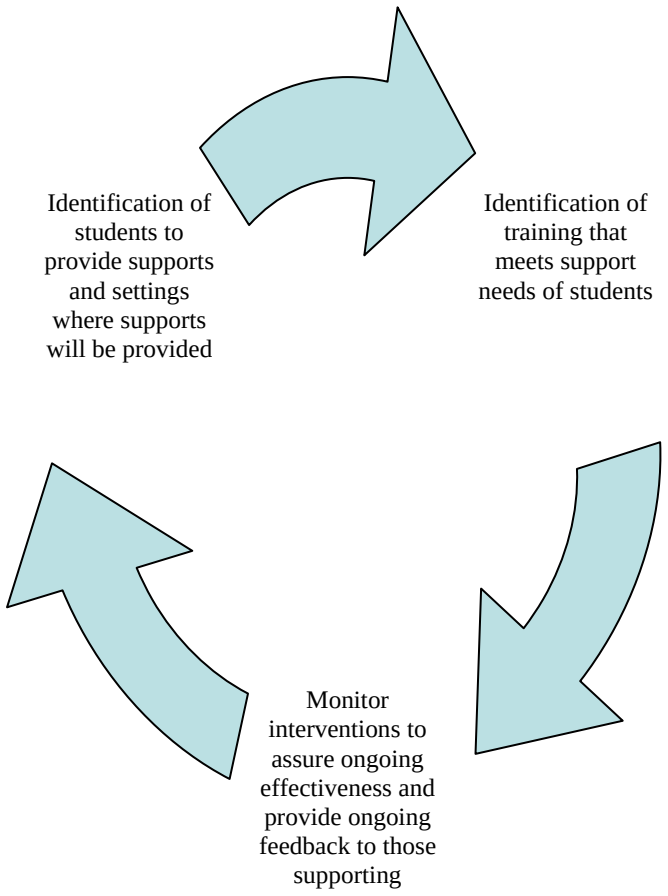


Figure 4 Cycle of Peer Support Monitoring (Weidle, Bolme, & Hoeyland, 2006)

This study trained peers to utilize specific strategies to meaningfully include their classmates with significant disabilities in inclusive physical education classes and observed whether an increase in occurrence in interactions was noted following that training. There was no component for follow-up with the students, providing additional supports and feedback, or involving more of the adult support staff in additional training. Haring and Breen (1992) implemented a peer-mediated social network intervention package consisting of recruitment of general education peers, weekly feedback and planning meetings with adult facilitation,

scheduling of interactions, peer data collection of social interactions, adult feedback on peer performance, peer reinforcement of participant social behavior, and social skill training for the participants. Following introduction of the intervention, the frequency of social interaction increased substantially for both the students with moderate intellectual disabilities/ autism.

Generalization of Supports

This study has looked at the provision of training to an entire class of students. Previous research in peer supports has supported this strategy. Carter, Cushing, Clark, & Kennedy (2005) found that the number of peers involved in peer support arrangements differentially influenced the academic and social participation of students with disabilities. The challenge will be to shift the success of the intervention to other classes and locations in the building throughout the school day. Although increases in peer interactions of students with significant disabilities were readily apparent in the physical education classrooms in which peer support arrangements were established, less is known about the extent to which these interactions would extend throughout and beyond the school day (Kennedy et al., 1997; Kennedy & Itkonen, 1994; Shukla et al., 1998, 1999). In middle and high schools, departmental class schedules, staggered lunch and break schedules, and large learning communities could all reduce opportunities for students to interact socially with peers throughout the school day. Additional research is needed to identify strategies that will facilitate development of lasting relationships that generalize to additional classrooms and other school or community contexts.

Individualization of Supports

Different interventions may have to be used to focus on different dimensions of social interaction. Considering the limited research on ways in which adolescents with significant

disabilities typically engage with their general education peers, determining which aspects of social interaction are most important to increase requires thoughtful consideration. It is easy to make assumptions that all students with significant disabilities need similar supports but the fact is that specific students have unique needs and supports must, therefore, be more individualized. This concept must be addressed in peer training.

Progress Monitoring

One way to demonstrate progress made in inclusive settings for students with significant disabilities supported by peers is through the use of progress monitoring. Progress monitoring offers promise for closely tracking mastery of important learning outcomes (Browder, Wallace, Snell, & Kleinert, 2005). Increases in initiated and reciprocal interactions were noteworthy, as engagement and interaction is a prerequisite for social development and are highly correlated with improved academic achievement (Marder, Wagner, & Sumi, 2003). Demonstrating that peer support interventions actually enhance students' performance and increase knowledge and skill acquisition remains a monumental, but important, challenge. Most schools are collecting data on proficiency in areas such as reading, writing, math, and most recently, science. Schools will, eventually, be required to submit documentation of proficiency on the use of peer supports to assist school personnel in providing the supports that students with significant disabilities may need to earn proficiency ratings in all curriculum areas.

Shifting from Social to Academic Benefit

High school students are capable of providing supports to their peers with significant disabilities, as evidenced by the variety of peer support interventions evaluated at the secondary level (Hughes, Rodi, Lorden, Pitkin, Derer, Hwang, & Cai, 1999; McDonnell, Thorson, Allen, &

Mathot-Buckner, 2000). Although numerous studies attest to the social benefits associated with peer support interventions for children with significant disabilities (Goldstein, Kaczmarek, & English, 2002; Odom, Brown, Schwartz, Zercher, & Sandall, 2002), less is known about the extent to which peers can deliver academic support effectively to their classmates with significant disabilities. Several studies offer evidence that peers can deliver academic support within the context of structured cooperative groups (Dugan, Kamps, Leonard, Watkins, Rheinberger, & Stackhaus, 1995; Hunt, Staub, Alwell, & Goetz, 1994), partner learning (McDonnell, Mathot-Buckner, Thorson, & Fister, 2001) and classwide peer tutoring (Kamps, Barbetta, Leonard, & Delquadri, 1994). It is recommended therefore, that research must still be done to determine ways in which schools identify peers to provide supports. Research must also assist in identifying the training that is most appropriate for those peers and the most efficient strategies to monitor the effectiveness of the interventions can be prioritized when individualized peer support arrangements are implemented in secondary schools.

Conclusion

The standards-based reform movement has placed heightened emphasis on increasing the quality of instruction and educational supports provided to students with significant disabilities in general education classrooms. The debate about whether to include students with significant disabilities in general education has largely been supplanted by examining how best to promote meaningful learning, skill acquisition, and lasting social relationships. Research documenting the impact of peer support interventions on the academic and social outcomes of students with significant disabilities offers promise for educators seeking effective, but practical, intervention strategies for promoting meaningful access to the general curriculum.

One monumental challenge that we, as educators, face is the extent to which the changes we seek to make are sufficient to affect lasting differences in the lives of students with significant disabilities. While increasing initiated or reciprocal interactions, sustaining social contacts among students, encouraging conversational turn-taking, teaching greetings, and developing individualized student goals to guide the selection of the most appropriate intervention approaches are important endeavors, future change efforts must involve more global, generalized interventions that go beyond a morning or afternoon physical education classroom for four students. Systemic efforts toward improving inclusive practices must include big picture strategies that impact a greater number of students and create an accepting educational environment where the expectation is to include the student with significant disabilities in general education contexts as the first option considered for placement and to then identify specific academic and social supports to assure the success of that placement.

Further research is recommended, then, to flesh out the sources of academic and social improvements associated with peer support interventions, as well as to determine the contexts under which these interventions maintain their effectiveness. Those findings will allow our educational support system to identify specific, individualized supports with accompanying goals and objectives designed with the general education curriculum, environment, and expectations in mind in order to fully support students with significant disabilities as they work, and play, in classrooms across the country.

APPENDIX A PEER SUPPORT LESSON PLAN; DAYS ONE AND TWO

Lesson Plan

Day One

1. Objective(s)

   The students, after participating in today's lessons, will identify three strategies of

   - specific activity participation
   - partial participation
   - addressing other goals, objectives on the Individual Education Plan in order to meaningfully include students with significant disabilities in general education Physical Education classrooms.

2. Materials

   1. Summarized goals, objectives, accommodations from the students' Individual Education Plans
   2. IEP at a Glance- (see Appendix E, F, G, and H)
   3. Vignette about "Amy" (see Appendix D)
   4. Handouts for Physical Education Lesson Plan; *Soccer Golf* (see Appendix I)
   5. List of possible modified outcomes and alternative activities consistent with the IEP to be imbedded in the lesson being taught.
   6. Vermont Frameworks: Physical Education, Grades 9-12-Knowledge/Motor Skills (Standards 2.2, 2.3, 3.1, 3.6) and Social Interaction (Standards 1.13, 1.15, 2.2, 3.1)
   7. List of behavioral intervention and redirection strategies
   8. Adapted ramp

3. Procedures

   a. Advance Organizer-The lesson will begin with an introduction of the researcher and a statement of the intent of the training. "My name is Mr. Reardon and I am a doctoral student working on research related to students with more significant disabilities." Researcher will then share with the class the vignette about "Amy" (see Appendix D) in order to emphasize the benefits, philosophically, of being included with peers without disabilities and to set the stage for the training.

   Researcher will then inform the students that he will be demonstrating and modeling some strategies they can use to modify curriculum expectations and/or the learning environment in order for a student with significant disabilities to be included in their Physical Education class.

   b. Body- Following the advanced organizer discussion, three support strategies (specific activity participation, partial participation, addressing other goals, objectives on the Individual Education Plan) to support academic, social, behavioral, communication, and independent functioning goals and objectives based on the individual needs of the student with significant disabilities will be demonstrated by the researcher to the prospective peer

supporters. This demonstration will allow them to become familiar with the needed supports prioritized by the educational support team for the student with significant disabilities included in their classroom. Discussion will follow on a summary of these strategies and a completed IEP at a Glance (see Appendix E, F, G, and H) for the students with significant disabilities will be provided to the prospective peer supports to demonstrate how these strategies can be utilized in a variety of settings.

Prospective peer supporters will then participate in a modeled mini-lesson on a specific Physical Education activity; *Soccer Golf* (see Appendix I) where Vermont Standards for Physical Education (See Appendix J) are addressed. Throughout the mini-lesson, three examples of modified curriculum outcomes will be modeled (specific activity participation, partial participation, and addressing other goals, objectives on the Individual Education Plan). While the Soccer Golf mini lesson is demonstrated, the researcher will emphasize the following three strategies:

- Prospective peer supporters will be shown how to identify some of the expectations of the activity designed for the entire class that the student with significant disabilities can also accomplish, often with little or no additional support. In the *Soccer Golf* activity, the researcher will demonstrate how *waiting for a turn* and *encouraging other peers* can be an expected outcome.
- Prospective peer supporters will be shown how to use partial participation to meaningfully include a student with significant disabilities in the classroom activity. The researcher will demonstrate that while the individual students are working on kicking the ball toward the cones, the student with significant disabilities in the wheelchair can either roll a ball using an adapted ramp (demonstrated) or help keep score.
- Prospective peer supporters will be shown how to address other priority educational goals during a group activity. The prospective peer supports will be informed that it is appropriate for the student with significant disabilities to be working on other priority goals as long as they are imbedded into what is occurring in the Physical Education class. The researcher will demonstrate how, during the *Soccer Golf* activity, a student may be working on *conversational turn-taking* or *practicing fine-motor skills* listed on the IEP.

c. Guided Practice- In groups of 4-5, students will practice the following strategies that could be employed during the *Soccer Golf* lesson;

1. While each student practices some rules of etiquette during the game, the student with significant disabilities can practice those same skills, like whispering on the field, remaining silent during the actual kicks of others, and congratulating other students for good shots. (specific activity participation)

2. While the group learns all of the terms to be memorized related to golf scoring (par, birdie, eagle, bogey, hole in one, fore, green, fairway), the student with significant disabilities would learn to tell the difference between a birdie and a bogey. (partial participation)

3. While the small group is discussing their strategy for trying to get their ball closest to the cone, the student with significant disabilities can be working on communication goals from the Individual Education Plan of maintaining three exchange conversations or a social goal from the IEP of waiting for their turn (addressing other goals). Those priority goals and objectives will have already been shared using the IEP at a Glance (see Appendix E, F, G, and H).

"Think, Pair, Share" activity to answer the following question: Name 3 activities that you can use to adapt or modify an assignment in your classroom using specific activity participation, partial participation, and by addressing other goals, objectives on an Individual Education Plan. During the "Think, Pair, Share, researcher will tell students to think silently about their answers. Then researcher will ask them to pair up with a partner to compare or discuss their responses. Finally, researcher will call randomly on a few students to summarize their discussion or give their answers.

d. Closing- Following the Guided practice, time will be set aside to summarize the strategies used, answer questions, and clarify issues.

Lesson Plan
Day Two

1. Objective(s) Prospective peer supporters will learn
    - The effectiveness and use of positive feedback and reinforcement to strengthen acceptable behaviors. Peers supporting a student with significant disabilities can use positive feedback to increase the probability that a desired behavior will increase in the future. The concepts of age-appropriate and contextually relevant communication skills will also be presented. This will include the kinds of greetings and other age-appropriate statements typical peers utilize on a daily basis.
    - The use of augmentative communication devices for meaningful participation in activities happening in a physical education classroom will also be demonstrated. Students will see how the actual devices work and will learn to identify ways in which the devices can be programmed to assist in successful participation.
    - Finally, prospective peer supporters will learn strategies to facilitate the development of peer relations and interactions in ways that provide alternatives to over-reliance on paraprofessionals. Peers tend to be less intrusive (stigmatizing) in general education settings and students with significant disabilities will do things for

peers that they won't do for an adult. Additionally, peers provide positive modeling, their involvement helps establish social relationships and helps students with disabilities feel accepted and build confidence.

2. Materials
    1. IEP at a Glance- (see Appendix E, F, G, and H)
    2. Examples of Positive Feedback
    3. Augmentative/Alternative Communication devices (Go Talk, Cheap Talk)
    4. Examples of strategies to minimize adult interference in the development of peer relations and interactions.

3. Procedures

a. Advance Organizer- A brief role play with the physical education teacher (arranged ahead of time) will demonstrate how demeaning it can be when teachers use negative feedback rather than positive feedback. The conversation that will take place is as follows:

Researcher- “Have you completed your essay, John?”
Teacher- “I still need to do the summary.”
Researcher “Can’t you ever get anything in on time?”
Teacher- “I tried to finish it last night but my mom and dad were both busy.”
Research- “Always blaming it on someone else- sit down!!”

\
Following that exchange, a more appropriate response to a student’s late or missing work was demonstrated;

Researcher- “Have you completed your essay, John?”
Teacher- “I still need to do the summary.”
Researcher “This seems to be an area of difficulty for you”
Teacher- “I tried to finish it last night but my mom and dad were both busy.”
Research- “Let’s talk about a way in which I can help you with this problem after class today”

b. Body-

1. The prospective peers will learn to be specific and detailed when providing positive reinforcement and to specifically tell the student what he or she did that was positive and why their positive behavior was important. For example, instead of just saying “Excellent job, John”, the prospective peer supporters should say “John, excellent job on starting your assignment.” Additional examples of positive feedback statements might include:
“Jimmy, I like the way you held the door, thank you for helping!”
“Jimmy, I liked the way you returned quietly from lunch, thank you for respecting others!”
Additionally, the use of age-appropriate greetings and language will be encouraged.

2. One student in each of the two classrooms uses an augmentative communication device to express his needs and wants. One uses a “Go Talk”, which has the capacity to record up to eight messages of significant length. This allows for messages like “Hello” or “I’m all done” to be available to the student at all times. It also allows for an entire conversation to be pre-recorded for later use with peers. The other student uses a “Cheap Talk” which can record up to eight messages with corresponding picture icons. It also allows the student to use the Picture Exchange Communication System (PECS) cards as a choice of symbols, which are used throughout his day in other classrooms.

   The researcher will demonstrate that while the rest of the class is participating in a discussion about golf terms, the student with significant disabilities can participate if the augmentative communication device is programmed appropriately. Prior to the demonstration, the device will be programmed to say “a birdie is when a golfer gets the ball in the cup in one shot less than the expected score, or par”. The researcher will give the device to a student and tell the class that the student will be playing the role of a student who can not verbally communicate his needs or wants. The researcher will engage the entire class in a conversation while asking for definitions of golf terminology from various students. The researcher will then purposefully ask the student role-playing the student with significant disabilities for the definition of “birdie”. The student will access the switch on the augmentative communication device to answer the question.

3. Finally, prospective peer supporters will learn strategies to facilitate the development of peer relations and interactions in ways that provide alternatives to over-reliance on paraprofessionals. A paraprofessional accompanies the two students to the physical education class and typically spends the majority of the period within 2-3 feet of the students. There is a significant body of research related to paraprofessionals actually inhibiting student interactions (Giangreco, Edelman, Luiselli, & MacFarland, 1997). As Giangreco and Broer (2003) found, peers tend to be less intrusive (stigmatizing) in general education settings and students with significant disabilities will do things for peers that they won't do for an adult. Additionally, peers provide positive modeling, their involvement helps establish social relationships and helps students with disabilities feel accepted and build confidence.

   Peers will be taught to say things like “Mrs. Smith (paraprofessional), can I work with Peter for awhile?” or (to paraprofessional) “Would it be OK if Peter helps our group with our project- he can keep track of the answers we give”.

d. Closing- Following the Guided practice, time will be set aside to summarize the strategies used, answer questions, and clarify issues.

APPENDIX B INFORMED CONSENT, PEERS WITHOUT DISABILITIES

Informed Consent

Monday, July 21, 2008

Dear Parent or Guardian:

I am a third year graduate student at the University of Central Florida. You are being contacted because you are the parent or guardian of a child at Poultney High School. Your child has a classmate with significant disabilities included in his/her classroom for part of the school day.

I am interested in conducting a study on the amount of times that students with significant disabilities interact with their peers without disabilities and the reasons for those interactions after I provide peer support training for the entire class of students without disabilities. These trainings will address the concepts of peer supports for students with significant disabilities. If you give your permission, your child will have a chance to participate in these trainings and to observe the support strategies modeled for him/her. Your child will then have the opportunity to role play these support strategies with other students in his/her class. The training sessions will last approximately 2 hours and will be done on successive days in the spring of 2008. However, your child will not be required to "make up" any assignments if he/she participates in the training.

Please be aware that this study is voluntary in nature and your child is not required to participate in this study and if you give initial permission, you may discontinue participation at any time. Your child's grade will not be affected whether you decide to have him/her participate or not. Because your child is not 18 years of age, you must be the one who provides permission for him/her to participate in the study. If your child does not participate in the training, an alternate activity will be provided that will directly connect with work that he/she is doing in class.

I will be the only person with access to the results of the study, which I will personally assure will be kept confidential. Please return the Consent Form within one week of the date on the top of this form.

There are no anticipated risks or compensation to your child if he/she participates in this survey. I believe, however, that your child will be able to relate to students with more significant disabilities more naturally and will be more comfortable with providing supports to a peer with significant disabilities in his/her classroom. This research study has been reviewed and approved by the University of Central Florida's Institutional Review Board. If you have any questions about this research project, please contact my faculty supervisor and dissertation chair, Dr. Wilfred Wienke at 407-823-2402 or you may email him at wwienke@mail.ucf.edu.

Information regarding your child's rights as a research volunteer may be obtained from:

IRB Office
Office of Research & Commercialization, 12201 Research Parkway, Suite 501,
Orlando, FL 32826-3246
Email: IRB@mail.ucf.edu or bkward@mail.ucf.edu
Phone: 407-823-2901
Fax: 407-823-3299

If you decide to have your child participate in this research study, please sign a copy of the consent form.

A second copy will be provided for your records.

Sincerely,

_____
Richard Reardon, Doctoral Candidate

Principal Investigator signature: _____
Wilfred Wienke, Ed.D.

Project title: The Impact of Formal Class-Wide Peer Support Training on the Occurrence of Initiated and Reciprocal Peer Interactions of Students with Significant Disabilities in Inclusive Contexts

___I have read the procedure described above in the "Informed Consent to Participate" form and agree to allow the researchers to use the information obtained from training and observing my child for related presentations and publications.

____I voluntarily agree to allow my child to participate in the study.

_____/_____

Parent/Guardian Date

Child's name (printed) _____

Researcher Contact Information:
Ric Reardon
102 North Street Extension
Rutland, Vermont, 05701
rreardon@mail.ucf.edu
1-802-558-480

APPENDIX C INFORMED ASSENT; PEERS WITHOUT DISABILITIES

Informed Assent

Monday, July 21, 2008

Student:

I am doing a research project on ways that kids without disabilities interact with students with significant disabilities in school. I am doing this study as part of my work at the University of Central Florida. I want to do this study so that you can make friends with students with significant disabilities in your classes and you will have more chances to have fun with those students.

I would like to have you take part in a training that will show you some ways to help students with significant disabilities that are in your classroom. Only Dr.Wienke, my professor at UCF, and my other committee members (Dr. Cynthia Pearl, Dr. Suzanne Martin, and Dr. Michael Giangreco) will see the results of my training. I will destroy the paperwork at the end of the study. Any names that are used will be changed so that nobody will know it was you in my study. It will not affect your grade if you decide you don't want to do this. If you don't want to participate in the training, you can tell me at any time and another activity will be given to you. You will not be paid for doing this. Would you like to take part in this research project?

____ I want to take part in Mr. Reardon's research project.

_____I do not wish to take part in Mr. Reardon's research project.

_____ _____

Student's Signature Date

_____

Student's Printed Name

APPENDIX D; STORY ABOUT AMY

Amy

Amy was a student fully included in a Kindergarten classroom in a small magnet school located on the east coast of the United States. The school personnel had undergone a significant amount of training and professional development related to best practices for meaningfully including students with significant disabilities in general education classrooms and had been successfully including students identified as severe and profound for a number of years. Amy utilized a wheelchair to move from classroom to classroom and from building to building and a communication board attached to the tray on her wheelchair to communicate her needs and wishes. She was a fully accepted, participating member of her Kindergarten class and made remarkable progress throughout the academic school year.

The next year she entered a first grade classroom with all of the friends she had made in Kindergarten as her teacher and all of the students but one looped into first grade. She continued to make remarkable progress on her priority goals and objectives on her Individual Education Plan (initiating conversations with peers and adults, learning to use a more complex augmentative communication device with more communication options, beginning an academic task with faded prompting) as she worked on activities embedded into the regular classroom routine. For instance, the 15 weekly spelling words, along with an accompanying sentence for each word, were pre-recorded on a multi-step device clamped to the armrest of Amy's wheelchair. On Friday's, the classroom teacher would give her spelling test to the rest of the students in the room. Amy's job was, when prompted, to hit the switch connected with her multi-step devise and the spelling words and sentences would be delivered to the students in the room. The teacher would say, "Amy, can we have the first spelling word please?" and Amy would have to hit the switch to activate the augmentative communication device that gave the students their word. The device would announce: "Lake, the boy swam in the lake. Lake" The students would write their word and Amy would wait patiently until prompted again for the next word. After the test was completed, the teacher could assess the mastery of learning for her other students by how well they scored on the spelling test and could assess Amy's mastery of her skill (responding to a request using her communication device) by the percentage of times that she hit the switch without a second prompt).

In the middle of Amy's first grade school year, she suddenly and unexpectedly passed away from a stomach complication and the school community was devastated. If Amy had been educated in a segregated school, as is typical in many areas of the country, her death would have impacted family members, family friends, and a few staff members and caregivers at that segregated site. Instead, her death impacted over 500 students in her school, a staff of over 70, the administrators of the school, and countless community members as an article on her successful inclusion had appeared in the local newspaper just months before her untimely death. Her life, although short, was filled with joy, friendship, and an acceptance of her by peers and adults alike, as an equal member of the school community.

A garden was built in her memory and businesses and members of the community donated benches, plaques, pavers, plants, trees, and trellises. That garden grows and flourishes today, 5 years later, as a place where children and adults attempt to come to peace with themselves and to remember a young girl who ended up having an immense impact on their lives.

APPENDIX E IEP AT A GLANCE, JOHN

IEP At-a-Glance and IEP Matrix

Student <u>Student 1</u> Date <u>4/08-6/08</u>

Enter the child's daily schedule below:

Priority Goals Enter targeted IEP goals below. Indicate time during the day that goal will be addressed by clicking the checkbox with your mouse, placing an "X" in the box by the schedule.	Arrival	Reading	Writing	Computer	Lunch	P.E.	Campus job	Math	Science	Social Studies	Dismissal
Student 1 will make change up to $20.00	☐	☐	☐	☐	☒	☐	☒	☒	☐	☐	☐
Student 1 will utilize strategies for comprehension	☐	☒	☒	☒	☐	☐	☐	☒	☒	☒	☐
Student 1 will use correct punctuation	☐	☒	☒	☒	☐	☐	☐	☒	☒	☒	☐
Student 1 will identify adjectives, adverbs, predicates	☐	☒	☒	☒	☐	☐	☐	☐	☒	☒	☐
Student 1 will restate what he has read or heard	☒	☒	☒	☐	☒	☒	☒	☒	☒	☒	☒
Student 1 will communicate that he does not understand	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒
Student 1 will practice his greeting skills	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒
Student 1 will practice taking turns	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒
Student 1 will use eye contact when conversing with others	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒
Student 1 will refrain from name-calling with peers	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒
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APPENDIX F; IEP AT A GLANCE, PAUL

IEP At-a-Glance and IEP Matrix

Student Student 2 Date 4/08-6/08

Enter the child's daily schedule below:

Priority Goals Enter targeted IEP goals below. Indicate time during the day that goal will be addressed by clicking the checkbox with your mouse, placing an "X" in the box by the schedule.	Arrival	Reading	Writing	Computer	Lunch	P.E.	Campus job	Math	Science	Social Studies	Dismissal
Student 2 will participate in a conversation over 2-4 turns about a given familiar topic using appropriate language skills and voice levels.	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒
Student 2 will follow 2 step commands containing the words under/over, first/middle/last, right/left with moderate cuing	☐	☒	☒	☒	☐	☒	☒	☒	☒	☒	☐
Student 2 will answer comprehension questions about a story or topic of interest	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒
Student 2 will use a timepiece to stay on task	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒
Student 2 will learn to follow up to 4 directions at a time	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒
Student 2 will adjust to changes in his routine by using verbal cues	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒
Student 2 will practice social skills needed in order to obtain a job	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒
Student 2 will use processing time when he is unsure of an activity	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒
	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒
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APPENDIX G; IEP AT A GLANCE, TRAVIS

IEP At-a-Glance and IEP Matrix

Student Student 3 Date 4/08-6/08

Enter the child's daily schedule below:

	Priority Goals Enter targeted IEP goals below. Indicate time during the day that goal will be addressed by clicking the checkbox with your mouse, placing an "X" in the box by the schedule.	Arrival	Reading	Writing	Computer	Lunch	P.E.	Campus job	Math	Science	Social Studies	Dismissal
	Student 3 will follow classroom; school rules	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒
	Student 3 willincrease his reading accuracy	☐	☒	☒	☒	☐	☒	☒	☒	☒	☒	☐
	Student 3 will identify parts of speech in writing	☐	☒	☒	☒	☐	☒	☒	☒	☒	☒	☐
	Student 3 will divide 2 digit numbers	☐	☐	☐	☐	☒	☒	☒	☒	☐	☐	☐
	Student 3 will react to non-verbal cues to refrain from self-stimulation behaviors	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒
	Student 3 will follow directions	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒
	Student 3 will advocate for himself in a peer setting	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒
	Student 3 will use verbal cues to stay on task	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒
		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
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		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
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		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

APPENDIX H; IEP AT A GLANCE, ROBERT

IEP At-a-Glance and IEP Matrix

Student Student 4 Date 4/08-6/08

Enter the child's daily schedule below:

Priority Goals Enter targeted IEP goals below. Indicate time during the day that goal will be addressed by clicking the checkbox with your mouse, placing an "X" in the box by the schedule.	Arrival	Reading	Writing	Computer	Lunch	P.E.	Campus job	Math	Science	Social Studies	Dismissal
Student 4 will wait his turn in social situations	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒
Student 4 will transfer from his wheelchair to a bean bag chair in the classroom	☐	☒	☒	☒	☐	☒	☒	☒	☒	☒	☐
Student 4 will practice skills learned so as not to interrupt others	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒
Student 4 will practice articulation skills	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒
Student 4 will decrease incidents of impulsivity	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒
Student 4 will decrease rate of speech to increase intelligibility	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒
Student 4 will formulate full sentences	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒
Student 4 will follow 2 step directions	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒
Student 4 will demonstrate comprehension by answering w,w,w,w,w questions	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒
Student 4 will use a schedule toget through his day	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒
Student 4 will sequence a 3 part activity following steps1,2, and 3 in order	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒
Student 4 will wait for a direction before starting a task	☒	☒	☒	☒	☒	☒	☒	☒	☐	☒	☒
	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
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	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
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	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

APPENDIX I; VERMONT PHYSICAL EDUCATION STANDARDS

Vermont Frameworks and Standards
Physically Active Lifestyle Choices

Students demonstrate competency in many and proficiency in a few of the skills and concepts needed for a lifetime of physical activity. This is evident when students:

3.6.aaa. Demonstrate competency in many and proficiency in a few selected skills and related activities (e.g., dance, gymnastics, sports);

3.6.bbb. Apply movement concepts and principles in increasingly complex activities;

3.6.ccc. Assess, refine, and maintain a comprehensive personal fitness plan;

3.6.ddd. Assume personal responsibility for setting goals for a physically active lifestyle.

Teamwork
Students perform effectively on teams that set and achieve goals, conduct investigations, solve problems, and create solutions (e.g., by using consensus-building and cooperation to work toward group decisions).

Interactions

Students interact respectfully with others, including those with whom they have differences.

APPENDIX J; PHYSICAL EDUCATION PLAN

Soccer Golf

Purpose of Activity: Students can practice golf etiquette without the use of golf clubs, balls, etc.
1. The person whose ball is farthest from the tee kicks first.
2. Everyone in the group must remain behind the person kicking until after they kick.
3. When someone is about to kick, there should be no talking.
4. The person with the lowest score kicks first from the next tee.

Suggested Grade Level: 6-12

Materials needed: 18 poly spots (numbered 1-18), 18 cones (numbered 1-18), soccer balls (one for each student), and a large outdoor field/area.

Procedure

Set up a course before class starts. Each poly spot represents a tee and each cone represents a hole. Put the #1 spot on the ground. Walk 10-100 yards away (depending on available space, kicking abilities of students, etc.) and put the #1 cone on the ground. Walk a few yards away and put the #2 poly spot down. Continue this until all 18 poly spots and cones are set up like a golf course. The object of the game is for the students to use their leg and foot as the golf club, the soccer ball as the golf ball, the poly spot as the tee and the cone as the hole. Students should try to hit the cone with their soccer ball with the fewest number of kicks possible. Use a shotgun start to minimize waiting time for your students. For example, if you have 36 students, 2 students start at each poly spot (tee). If all students started at poly spot #1, there would be a long line. Students who start at spot #1 will finish when they return to spot #1. Students who start at spot #6 will finish when they return to spot #6.

Rules of Etiquette Taught:

There are countless golf rules and etiquette procedures that can be taught in this lesson other than those listed in prerequisites. Some include:
1. Lowest score wins.
2. The first shot is always from the tee.
3. Let the ball come to a complete stop before you hit your next shot.
4. Don't touch any ball other than your own.
5. Terms (par, birdie, eagle, bogey, hole in one, fore, green, fairway, etc.) can be taught.
6. A group (foursome) must wait until the group in front of them is out of range before they kick.

Assessment:

Observe how each student follows the rules of etiquette identified. Use a check sheet to identify those times when certain students successfully met the expectations of the game and share them with the group. For the students with more significant disabilities, recognize the current functioning level of the students as a starting point and observe how well they meet their modified expectations and how many of the goals and objectives identified on the IEP were addressed (communication, academics, independent functioning, medical, social).

APPENDIX K: DAY ONE EVALUATION

Day One Evaluation – Using a paper-pencil test, students will;

1 Name a strategy that can be used during a physical education activity that will modify outcomes for a student with significant disabilities using **specific activity participation**.

_____

2 Name a strategy that can be used to modify a physical education skill for a student with significant disabilities using **partial participation**.

_____

3 Name a strategy that can be used to modify a physical education outcome for a student with significant disabilities through **addressing other goals and objectives from the IEP.**

_____

APPENDIX L: DAY TWO EVALUATION

Day Two Evaluation

1 What is something that can be said that would be an example of **positive reinforcement** or **positive feedback?**

_____

2 Identify a strategy that you would use with an **augmentative communication device** to include a student with significant disabilities in an activity on which you and your peers were working?

_____

3**.** Identify something you might say to an adult working in a classroom with a student with significant disabilities that would allow you to better interact and support that student and **avoid overreliance on that adult.**

_____

APPENDIX M; STUDENT PRE-POST SURVEY

Strategies for Supporting Students with Significant Disabilities in Inclusive Settings- Peer Support Survey

Instructions: Please circle one answer for each statement below. Thank You.

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	Not Applicable
	1	2	3	4	5	NA
START HERE						
1. I can identify parts of an activity designed for the entire class that the student with significant disabilities can also do.	1	2	3	4	5	N/A
2. I know some ways to use partial participation to meaningfully include a student with significant disabilities in a classroom activity.	1	2	3	4	5	N/A
3. I know some ways that I can help kids with significant disabilities to work on other priority educational goals during a classroom activity.	1	2	3	4	5	N/A
4. I know some ways that I can use positive feedback to encourage students with significant disabilities to participate in the activities in my class.	1	2	3	4	5	N/A
5. I know how to use some technology that kids with significant disabilities use to communicate and participate in activities in which the entire class is participating.	1	2	3	4	5	N/A
6. I know some ways that I can approach a student with significant disabilities that can help to avoid the over-use of a paraprofessional.	1	2	3	4	5	N/A

Thank You for participating in this survey. Your responses will be used to improve outcomes for students with significant disabilities in your school.

APPENDIX N; DATA COLLECTION INSTRUMENT

Partial Interval Recording for Social Interactions (Reardon, 2008)

Date_____ Time Start _____ Observer _____

Teacher _____ Time Finish _____ Student 1 (White) _____

Setting _____ Student 2 (Shaded) _____

Each Interval = 30 seconds

Number	Occur?	II RI	Number	Occur?	II RI	Number	Occur?	II RI	Number	Occur?	II RI
1	Y N	II RI	1	Y N	II RI	1	Y N	II RI	1	Y N	II RI
2	Y N	II RI	2	Y N	II RI	2	Y N	II RI	2	Y N	II RI
3	Y N	II RI	3	Y N	II RI	3	Y N	II RI	3	Y N	II RI
4	Y N	II RI	4	Y N	II RI	4	Y N	II RI	4	Y N	II RI
5	Y N	II RI	5	Y N	II RI	5	Y N	II RI	5	Y N	II RI
6	Y N	II RI	6	Y N	II RI	6	Y N	II RI	6	Y N	II RI
7	Y N	II RI	7	Y N	II RI	7	Y N	II RI	7	Y N	II RI
8	Y N	II RI	8	Y N	II RI	8	Y N	II RI	8	Y N	II RI
9	Y N	II RI	9	Y N	II RI	9	Y N	II RI	9	Y N	II RI
10	Y N	II RI	10	Y N	II RI	10	Y N	II RI	10	Y N	II RI
11	Y N	II RI	11	Y N	II RI	11	Y N	II RI	11	Y N	II RI
12	Y N	II RI	12	Y N	II RI	12	Y N	II RI	12	Y N	II RI
Total	Y= N=	II= RI=	Total	Y= N=	II= RI=	Total	Y= N=	II= RI=	Total	Y= N=	II= RI=
Total	Y= N=	II= RI=	Total	Y= N=	II= RI=	Total	Y= N=	II= RI=	Total	Y= N=	II= RI=

Notes:

APPENDIX O; INSTITUTIONAL REVIEW BOARD LETTER

Notice of Expedited Initial Review and Approval

From: **UCF Institutional Review Board**
FWA00000351, Exp. 5/07/10, IRB00001138
To: **Richard S Reardon**
Date: **April 09, 2008**
IRB Number: **SBE-08-05583**
Study Title: **The Impact of Formal Class-Wide Peer Support Training on the Occurrence of Initiated and Reciprocal Peer Interactions of Students with Significant Disabilities in Inclusive Contexts**

Dear Researcher:

Your research protocol noted above was approved by **expedited** review by the UCF IRB Vice-chair on 4/8/2008. **The expiration date is 4/7/2009.** Your study was determined to be minimal risk for human subjects and expeditable per federal regulations, 45 CFR 46.110. The category for which this study qualifies as expeditable research is as follows:

7. Research on individual or group characteristics or behavior (including, but not limited to, research on perception, cognition, motivation, identity, language, communication, cultural beliefs or practices, and social behavior) or research employing survey, interview, oral history, focus group, program evaluation, human factors evaluation, or quality assurance methodologies.

The IRB has approved a **consent procedure which requires participants to sign consent forms.** Use of the approved, stamped consent document(s) is required. Only approved investigators (or other approved key study personnel) may solicit consent for research participation. Subjects or their representatives must receive a copy of the consent form(s).

All data, which may include signed consent form documents, must be retained in a locked file cabinet for a minimum of three years (six if HIPAA applies) past the completion of this research. Any links to the identification of participants should be maintained on a password-protected computer if electronic information is used. Additional requirements may be imposed by your funding agency, your department, or other entities. Access to data is limited to authorized individuals listed as key study personnel.

To continue this research beyond the expiration date, a Continuing Review Form must be submitted 2 – 4 weeks prior to the expiration date. Advise the IRB if you receive a subpoena for the release of this information, or if a breach of confidentiality occurs. Also report any unanticipated problems or serious adverse events (within 5 working days). Do not make changes to the protocol methodology or consent form before obtaining IRB approval. Changes can be submitted for IRB review using the Addendum/Modification Request Form. An Addendum/Modification Request Form **cannot** be used to extend the approval period of a study. All forms may be completed and submitted online at http://iris.research.ucf.edu .

Failure to provide a continuing review report could lead to study suspension, a loss of funding and/or publication possibilities, or reporting of noncompliance to sponsors or funding agencies. The IRB maintains the authority under 45 CFR 46.110(e) to observe or have a third party observe the consent process and the research.

On behalf of Tracy Dietz, Ph.D., UCF IRB Chair, this letter is signed by:

Signature applied by Janice Turchin on 04/09/2008 10:57:15 AM EDT IRB Coordinator

APPENDIX P; INFORMED CONSENT, STUDENT WITH SIGNIFICANT DISABILITIES

Informed Consent

Monday, July 21, 2008

Dear Parent or Guardian:

I am a doctoral candidate at the University of Central Florida. You are being contacted because you are the parent or guardian of a child with significant disabilities at Poultney High School.

I am interested in conducting a study to look at the ways in which students with significant disabilities interact with their classmates. I would like to see how often those interactions occur and why they are occurring. I will be providing peer support training to an entire class of students without disabilities. Your child's classmates will have a chance to learn the strategies needed to effectively support their peers with significant disabilities in their classrooms.

Following the peer support training, I will be observing your child in the regular classroom environment to determine whether the peer support training increases the peer interactions of your child in that environment. I also plan to identify whether the interactions were initiated or in response to what another person has done. I would like your permission to ask your child's teachers to provide me with information on your child's Individual Education Plan and would like to review your child's Plan and other documents to assist me in developing a student profile and to evaluate the effectiveness of the support strategy as it relates to the Individual Education Plan. I will be asking permission from your school's principal as well. All information will be kept confidential and locked in a secure place and I will be the only person who has access to such information. Three years from the end of the study, all information will be destroyed.

Please be aware that this study is voluntary and your child is not required to participate in this study and you may discontinue participation at any time without penalty. Please also be reminded that because your child is not 18 years of age, you must provide permission for them to participate in the study. Non-participation will not affect your child's grade.

I will be the only person who has the results of the study, which I will personally assure you will be kept confidential. Please return the Consent Form within one week of the date on the top of this form.

There are no anticipated risks or compensation to your child as a participant in this survey. There is, however, the expectation that your child may receive more opportunities to interact with his peers and to develop friendships with his/her peers in the school. This research study has been reviewed and approved by the University of Central Florida's Institutional Review Board. If you have any questions about this research project, please contact my faculty supervisor and dissertation chair, Dr. Wilfred Wienke at 407-823-2402 or you may email him at wwienke@mail.ucf.edu. Information regarding your child's rights as a research volunteer may be obtained from:

IRB Office
Office of Research & Commercialization, 12201 Research Parkway, Suite 501,
Orlando, FL 32826-3246
Email: IRB@mail.ucf.edu or bkward@mail.ucf.edu
Phone: 407-823-2901
Fax: 407-823-3299

If you decide to have your child participate in this research study, please sign a copy of the consent form.

A second copy will be provided for your records.

Sincerely,

_____
Richard Reardon, Doctoral Candidate

Principal Investigator signature: _____
Wilfred Wienke, Ed.D.

Project title: The Impact of Formal Class-Wide Peer Support Training on the Occurrence of Initiated and Reciprocal Peer Interactions of Students with Significant Disabilities in Inclusive Contexts

_____I have read the "Informed Consent to Participate" and agree to allow the researchers to use the information obtained from observing my child for related presentations and publications.

_____I voluntarily agree to allow my child to participate in the study.

_____/_____

Parent/Guardian Date

Child's name _____

Researcher Contact Information:
Ric Reardon
102 North Street Extension
Rutland, Vermont, 05701
rreardon@mail.ucf.edu
1-802-558-480

APPENDIX Q; INFORMED ASSENT, STUDENTS WITH SIGNIFICANT DISABILITIES

Informed Assent

Monday, July 21, 2008

Student:

I am doing a research project on ways that kids support each other in school. I am doing this study as part of my work at the University of Central Florida. I want to do this study so that you can make more friends in your classes and you will have more chances to have fun with those students.

I would like to observe you during some of your classes when you will be working with other students. Only Dr.Wienke, my professor at UCF, and my other committee members (Dr. Cynthia Pearl, Dr. Suzanne Martin, and Dr. Michael Giangreco) will see the results of my observations. All of the information from the study will be kept locked up for three years. Any names that are used will be changed so that nobody will know it was you in my study. This is a voluntary study and if you don't want to take part in it, it will not affect your grade. If you don't want to be observed, you can tell me at any time. You will not be paid for doing this. Would you like to take part in this research project?

____ I want to take part in Mr. Reardon's research project.

_____I do not wish to take part in Mr. Reardon's research project.

_____ _____

Student's Signature Date

_____

Student's Printed Name

APPENDIX R; TEACHER SATISFACTION SURVEY

Teacher Satisfaction Survey: Students with Significant Disabilities in Inclusive Settings

Instructions: Please circle one answer for each statement below. Thank You.

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	Not Applicable
	1	2	3	4	5	N/A
START HERE						
1. The class-wide peer support training was developed taking into account the current awareness levels of students without disabilities in my class.	1	2	3	4	5	N/A
2. The implementation of the class-wide peer support training that supports students with significant disabilities will not require a significant amount of planning.	1	2	3	4	5	N/A
3. The class-wide peer support training is practical to implement in a general education classroom by a general education or special education teacher.	1	2	3	4	5	N/A
4. I plan to continue to use the class-wide peer support strategies if, or when, another student with significant disabilities is included in my class.	1	2	3	4	5	N/A
5. Class-wide peer supports are an effective strategy for students with significant disabilities to be meaningfully included in general education classrooms.	1	2	3	4	5	N/A
6. There was a discernable difference in the comfort level of the students providing supports from the start of the study to the end of the study.	1	2	3	4	5	N/A
7. There was a discernable difference in the interaction levels of students with significant disabilities from the start of the study to the end of the study.	1	2	3	4	5	N/A

APPENDIX S; SPECIAL EDUCATION TEACHER LETTER

May 16, 2007

To Whom it May Concern,

I wanted to write this letter to show my support and gratitude to Ric Reardon and his efforts toward the study he facilitated at our high school. From the first day I met Ric, I could tell that he was passionate about what he was trying to attempt and that his efforts would result in positive outcomes for the students I supervise.

The study started out with a meeting between Ric, myself, and our school principal, Jeanne Marie Oakman. Ric discussed his plan for the study and asked about certain students with significant disabilities who might be involved in the study. Copies of his consent forms, study outline, and contact information were given to Mrs. Oakman and me and a follow-up date was set. Ric then met with our Physical Education teacher, Dave Capman, and scheduled a time to meet with both of his classes to introduce the study and hand out the consent forms to the students in each class. Once all of the forms were returned, Ric returned to the school to collect some observational data in the gym and to provide the peer support training to both classes.

The training was so exciting to watch! Ric took a typical activity that all of the students had participated in and shared six strategies that the peers could use to have my students with significant disabilities participate in those activities. I had never thought about having the students record certain messages on my students' augmentative communication devices but now see how appropriate that is!

I saw some incredible changes in all four of the students who were observed. A student who was painfully shy was more outgoing. A student who refused to participate in gross motor activities began to try some of those activities while encouraged by his classmates. One student who had lost the desire to initiate conversations with his classmates was now more confident in doing so since his conversations were suddenly being replied to. Finally, one student improved his communication skills, particularly his oral sentence structure, remarkably during the study ad is now very accepted in the school community.

Our school was so lucky to have had the expertise of Ric Reardon as he facilitated this study. We have asked him to come back in the fall, not only to help support this effort but to help us with other issues like Differentiating Instruction and Scheduling for Inclusion.

Linda Smith
Teacher, PHS

APPENDIX T; PHYSICAL EDUCATION TEACHER LETTER

June 9, 2008

To Dissertation Committee,

I would like to express my appreciation to Richard Reardon for his time spent with both of my physical education classrooms this spring. When he and I met for the first time, he talked about some possible strategies that he would teach to my students so they could help out with their classmates who have disabilities. I was excited about those strategies and looked forward to watching and participating in his training.

I was amazed at how well the training was done and how attentive my students were. They can be a bit busy at times and they were quiet and listened well during both days of training. I could tell by their discussions that they learned a lot and planned to use the strategies used in my classrooms.

It was very powerful watching what happened with the four boys once the supports and discussions from the other students in the class started to happen. We found out more about what the four boys COULD do rather than concentrating on what they COULD NOT do. It was a great learning experience for the students in the class and for me as a teacher. I look forward to continuing to work with Richard next year as new students will need to be trained to carry on the support program.

Sincerely,

Dave Capman

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