SOCIAL PARTICIPATION IN SCHOOLS: DEVELOPING THE ROLE OF OCCUPATIONAL THERAPY PRACTITIONERS

Kelly L. Leigers
University of Kentucky, kelly.leigers@eku.edu
Author ORCID Identifier:
https://orcid.org/0000-0002-1572-7574
Digital Object Identifier: https://doi.org/10.13023/ETD.2017.315

Right click to open a feedback form in a new tab to let us know how this document benefits you.

Recommended Citation

SOCIAL PARTICIPATION IN SCHOOLS:
DEVELOPING THE ROLE OF OCCUPATIONAL THERAPY PRACTITIONERS

_____

DISSERTATION
_____

A dissertation submitted in partial fulfillment of the
Requirements for degree of Doctor of Philosophy in the
College of Health Sciences
At the University of Kentucky

By
Kelly L Leigers

Lexington, KY

Director: Dr. Colleen Schneck, Professor of Rehabilitation Science at the University
              of Kentucky; Chair and Professor of Occupational Science and
              Occupational Therapy at Eastern Kentucky University

Lexington, KY

2017

ABSTRACT OF DISSERTATION

SOCIAL PARTICIPATION IN SCHOOLS:
DEVELOPING THE ROLE OF OCCUPATIONAL THERAPY PRACTITIONERS

The aim of this dissertation is to build the repertoire of occupational therapy practitioners so that they are better prepared in the provision of services addressing social participation of students with disabilities in the general education classroom. Students with disabilities in general education classrooms tend to have greater difficulty establishing and maintaining friendships (Wight & Chapparo, 2008), have fewer reciprocated friendships (Kemp & Carter, 2002), and lower stability in relationships than peers without disabilities. Furthermore, studies indicate that students with disabilities are less social accepted (Ekornas, Heimann, Tjus, Heyerdahl, & Lundervold, 2011) and are more isolated (Nadeau & Tessier, 2006). Students are often aware of the stigma and negative attitudes that promote "disabling expectations" of them in general education classrooms (McMaugh, 2011). Social participation is important for students with disabilities as it leads to better functional and psychosocial outcomes (Richardson, 2002), decreases the likelihood of behavioral and emotional problems (Murray & Greenberg, 2006), and promotes a better subjective health status (Gerich, 2003), all of which leads to a more conducive learning environment. Occupational therapists report role confusion, a limited knowledge base, and express the need for better preparation and continuing education in psychosocial interventions for students, along with more tools and reference materials (Beck et al., 2006).

This dissertation is the accumulation and progression of four different research projects centered around social participation in the schools for students with disabilities in general education classrooms. This research includes a systematic review of the literature, a survey of occupational therapy practitioners, a phenomenological look at the lived experience of school-based team members who implemented a program to promote inclusion, and a mixed methods study utilizing ethnographic principles and social network analysis to study a case of seventh graders and their social interactions. These studies reveal the need for occupational therapy practitioners to (a) provide practical knowledge to all individuals within the social environment, (b) collaborate with team members for successful intervention, program development, and goal setting, (c) facilitate involvement in valued school roles, and (d) structure and adapt activities to promote active participation of all students. Further implications for occupational therapy practice and future research is also discussed.

Kelly L. Leigers

July 19, 2017
Date

SOCIAL PARTICIPATION IN SCHOOLS:
DEVELOPING THE ROLE OF OCCUPATIONAL THERAPY PRACTITIONERS

By

Kelly L Leigers

_____Dr. Colleen Schneck_____
Director of Dissertation

_____Dr. Esther Dupont-Versteegden_____
Director of Graduate Studies

_____July 19, 2017_____
Date

Table of Contents

List of Tables

List of Figures

Chapter 1: Introduction

Background

Over the past four decades, with the passing of the Education of All Handicapped Children Act (P.L. 94-142) in 1975, the policies of segregating students because of their disabilities has been slowly but steadily replaced with practices of integration and inclusion. Local, state, and federal actions have led to greater access and individualized placements for students with disabilities in general education classrooms along their peers, with provisions in place to meet their educational needs. In 2012 – 2013, 61% of students with disabilities spent most of the day (80% of the time or more) in general education classes compared to just 33% in 1990-1991 (Kena et al., 2015). The percentages vary considerably by disability category, and by severity. Only 7% of students with significant cognitive disabilities requiring alternate assessment based on alternate achievement standards were served in general education classrooms or resource rooms (Kleinert et al., 2015).

Placing students with disabilities in general education classrooms provide opportunities for socialization and increased participation with peers without disabilities. The psychological role of being a "member of a class" (Hemmingson & Borrell, 2002) is an important role for students with and without disabilities, and has been found to correlate with motivation, grades, and effort (Goodenow, 1993). However, issues related to social inclusion, social integration, and social participation continue to exist for students with disabilities, as being in a general education classroom by itself does not lead to relationships with peers, feelings of acceptance or active engagement in learning activities. In fact, placement in a setting without mechanisms in place to promote social

inclusion, may strengthen previously held negative stereotypes by highlighting

differences and academic struggles (Copeland et al., 2004; Mikami, Lerner, & Lun,

2010).

Contact Theory and Social Inclusion

The Intergroup Contact Theory (Allport, 1954) addresses the social relations

between students with and without disabilities in a general education environment. The

theory posits that the acceptance or exclusion of students with disabilities depends, not on

the physical presence of students with disabilities, but mostly upon the type of

interactions that occur between them and their peers. Contact between individuals must

be designed and implemented in order to meet four conditions necessary to decrease

prejudice and discrimination. These conditions are 1) individuals must have equal status;

2) the community must give support, 3) individuals must share a common goal or

objective (active cooperation), and 4) the relation must be deep, genuine, and intimate

(Allport). This is supported by research that suggests that contact, information, and

cooperative teamwork are most effective in promoting positive attitudes (Garcia, Diaz, &

Rodriguez, 2009). In regards to these elements, inclusionary practices of students with

disabilities in general education classrooms are lacking.

Students with disabilities often have lower social status than their peers without

disabilities (Cambra & Silvestre, 2003); furthermore, interactions that do occur between

students with and without disabilities tend to be superficial and short in duration

(Richardson, 2002). Students are not seen as equal members as they are often perceived

as needing help or requiring assistance. Richardson conducted a qualitative study of three

students with physical disabilities at or near grade level to gain a greater understanding of

the school social environment and of the students' social interactional characteristic. Findings suggest that students with disabilities had a desire to help others and would offer ways in which they could contribute to the class. However, teachers and peers within the classroom generally did not take these offers seriously, effectively marginalizing the participation and the membership role of students with disabilities. In addition, the students with physical disabilities often perceived the act of receiving assistance as socializing. This led to students with disabilities requesting help or creating opportunities to be helped in order to receive attention. These results are supported in findings that peers are often more inclined to express a willingness to help a student with a disability as opposed to be their friend (Nota, Ferrari, & Soresi, 2005). Such an imbalance in roles creates an inequality among peer status in the classroom. Classroom structures to support reciprocity in interactions are limited and inconsistently applied (Richardson).

Those students with disabilities who do develop peer supports have better psychosocial and functional outcomes (Richardson, 2002), are less likely to drop out of school (Reschly & Christenson, 2006), have the support necessary to combat bullying (Bourke & Burgman, 2010) and are less likely to experience emotional and behavioral problems (Murray & Greenberg, 2006). In a qualitative study conducted by Bourke and Burgman, one student with a physical disability was identified as having a strong peer network which gave him "a sense of happiness and belonging" (p. 368) that also allowed him to "cope with bullying" (p. 368). Students with disabilities report that forming positive relations with peers improves their sense of safety and belonging, and provides an atmosphere conducive to learning (Bourke & Burgman; McMaugh, 2011). Although students with disabilities in general education classrooms tend to be bullied less than

3

students in special education classrooms, the rate of bullying for students with disabilities is significantly higher than students without disabilities regardless of placement (Rose, Espelage, & Monda-Amaya, 2009). Social support received from peers has been found to be the most important means of reducing bullying for students with disabilities compared to support received from parents or teachers (Humphrey & Symes, 2010). Students without a strong social network report tolerating bullying in order to even maintain a loose or superficial connection with peers or even a connection with the bullies themselves (Bourke & Burgman).

Social attitudes, particularly involving stigma and bullying, continue to create barriers to students with disabilities participating as full and equal members in the classroom (Anaby et al., 2013; O'Donovan, Doyle, & Gallagher, 2009; Symes & Humphrey, 2010). Students with disabilities in general education classrooms tend to have greater difficulty in establishing and maintaining friendships (Wight & Chapparo, 2008), have fewer reciprocated friends (Kemp & Carter, 2002), and lower stability in relationships than peers without disabilities. Furthermore, studies indicate that students with disabilities are less socially accepted (Ekornas, Heimann, Tjus, Heyerdahl, & Lundervold, 2011), and are more isolated (Nadeau & Tessier, 2006). Students are often aware of the stigma and negative attitudes that promote "disabling expectations" of them in general education classrooms (McMaugh, 2011). Although physical placement in general education classrooms is needed to provide opportunities for socialization and participation, what is even more important for students with disabilities is what actually occurs within that context.

Interventions in the Natural Context

Research suggests interventions must take place within general education classrooms to address social participation and secure true inclusionary placements for students with disabilities (Cambra & Silvestre, 2003; Wong, 2008). Evans and Meyer (2001) report on a case study in which meaningful contexts developed out of relationships formed in the classroom for a student with Rett syndrome. Their research suggested that friendship development did not occur spontaneously, nor were friendships the result of social skill instruction provided to the student with the disability to address internal client factors, but that friendship development occurred when caregivers and peers were interested and instructed on how to expand their own skills in interacting with another with a disability.

Focusing on dyadic relationships between students with and without disabilities within classrooms has proven to enhance existing friendships and facilitate friendship stability (Wiener & Schneider, 2002). Peer-mediated interventions have been shown to be effective in addressing the social participation of students with disabilities (Goldstein, Kaczmarek, Pennington, & Shafer, 1992), especially when peers have been given guidance and initial instruction (Carter, Moss, Hoffman, & Sisco, 2011). One peer-mediated intervention consisted of occupational therapists providing instructions, modeling, and role-playing to teach students without disabilities how to facilitate positive social interactions, initiate play, and facilitate games with those who had difficult making friends. Study findings demonstrated significant positive outcomes related to social network salience (Kasari, Rotheram-Fuller, Locke, & Gulsrud, 2012). No positive outcomes were noted for the comparison group in which direct therapeutic services were

provided to students with disabilities to target skill development. Another study showed

how peer-mediated interventions also benefit students without disabilities through

enhanced academic performance, improved attitudes regarding disability, unanticipated

personal growth, and lasting friendships (Copeland et al., 2004).

Interventions conducted within the natural environment can also target teachers,

teacher assistants, and paraprofessionals. Students with disabilities perceive the presence

of teacher assistants or adult volunteers as helpful in terms of completing classroom

activities, but as a barrier to establishing friendships with peers (O'Rourke & Houghton,

2008). Social participation is not directly determined by the type of disability or the

degree of impairment but is rather indirectly impacted by the provision of educational

supports and time spent in the classroom. Students with disabilities who are more likely

to receive greater support from classroom aides/volunteers, and students with disabilities

who are more likely to be pulled from the classroom, are less likely to participate in class

activities. As there is a strong relation between classroom participation and social

participation with peers, special education may be inadvertently hindering the ability of

students with disabilities to access the same social benefits as their peers (Wendelborg &

Tossebro, 2011). The impact of the environment, as demonstrated, can be nuanced and

subjective; environmental factors, such as social supports, can be seen as a barrier for

some and a facilitator for others (Layton & Steel, 2015).

Attitudes of Peers Within the Social Context

Peers within the general education classroom are a major component of the social

community that surrounds students with disabilities in schools. Peers are more likely to

be accepting of students who have physical disabilities rather than intellectual disabilities

(Nota et al., 2005) or disabilities that affect social problem solving and emotional

regulation (Odom et al., 2006). As peers decide to include or exclude a student with a

physical disability for participation in an activity, they often will consider issues of

ability. Although peers will generally not select a student with a disability, they are more

likely to include the student if the disability is perceived to have a potentially minimal

impact on the overall activity (Diamond & Tu, 2009). In selecting a student with a social

disability, peers often find it more acceptable to invite them into public spaces (e.g.

informal soccer activity in a public space or a school classroom), but find it acceptable to

exclude students with social disabilities from personal spaces (e.g. their home or a lab

group). As adolescents considered the moral consideration of whether or not to invite a

peer with a social disability into various contexts, researchers found that the general

education classroom setting invoked a possible conundrum in which adolescents were

able to provide both moral justification for inviting and for not inviting peers with social

disability (Bottema-Beutel & Li, 2015).

Nowicki, Brown, and Stepien (2014) conducted interviews of 49 fifth and sixth

grade children and found four themes related to peers' perceptions on why students with

disabilities are excluded. The first theme identified was that of the thoughts and actions

of other children. Statements from peers included "They aren't part of our community"

(p. 351) and "Other kids are too cool to play with them" (p. 351). The second theme

identified relates to differences in learning ability and resource allocation. Peer comments

included "Other kids are mad because the kids with special needs get attention and other

kids don't" (p. 351) and "They get to do easier work" (p. 351). Actions and

characteristics was another theme illustrated by comments such as students with

disabilities "do things differently" (p. 351) and "have like difficulty pronouncing words" (p. 351). The fourth and final theme identified was negative behaviors and thoughts. Comments included "Because some people don't know what to do," and "Because other kids think kids with learning difficulties are weird or not nice" (p. 351). This research suggested that a pivotal thought process that drives students to exclude others is the concept of difference (Nowicki, et al.).

These differences lead to a lack of understanding on how to engage with students with disabilities resulting in frustration and fear (Copeland et al., 2004). Whitehurst and Howells (2006), in a qualitative study of students without disabilities noted that students "spoke of their feelings of inadequacy regarding their own abilities, feelings of unfamiliarity, both with the situation and with the children with special needs, and feelings of vulnerability" (p. 42). Attitudes are a learned knowledge, and are susceptible to change depending upon the quality and duration of information available. Multiple research studies have found a relationship between disability awareness programs and positive attitudes toward students with disabilities (Favazza, Phillipsen, & Kumar, 2000; Ison et al., 2010; Leigers & Myers, 2015; Reina, Lopez, Jimenez, Farcia-Calvo, & Hutzler, 2011; Rillotta & Nettelbeck, 2007). Peers who received training on how to positively acknowledge a student with a disability, how to provide affective responses (e.g. smiling, laughing, etc.), how to engage in effective communication, and ways to participate in shared tasks were more likely to engage with students with disabilities. Furthermore, students with disabilities were more likely to receive friendship peer nominations following the training provided to their peers (Middleton, Zollinger, & Keene, 1986).

Social Participation, Occupational Therapy, and Rehabilitation

Rehabilitation Science and the ICF

The World Health Organization's (WHO) General Assembly made an important step in redefining conceptual thoughts on the idea of disability when it replaced previous language of "handicap" with the concept of "participation" in the International Classification of Functioning, Disability and Health (ICF) model. In doing so, ability was perceived on a continuum in which all individuals can be measured against regardless of any specific physical limitation. With the outcome of participation, the ICF captures the interrelationship that exists between individual physical and personal factors, and those of the social/contextual environment. This ideological shift in how disability is perceived places the onus of functional impairment not solely on the physical limitations of the individual, but also on external environmental factors. For example, participation can be impacted as a direct result of the social environment, even when there is no injury or impairment. As such, the ICF incorporates both the medical model and the social model of disability, and is deemed to be a bio-psychosocial approach. The ICF and the ICF-CY (children and youth version) can be used as interdisciplinary tools, providing a common framework and language in health care and rehabilitation science. Furthermore, it serves as a globally accepted, unifying, conceptual description of rehabilitation (World Health Organization (WHO), 2007).

The concept of participation, defined as "involvement of a person in life situations," and activity, seen as the "execution of a task or action by an individual" (WHO, 2001, p. 9) is centralized within the ICF model together with the component of body functions and structures. Activities and participation are assessed through an

9

individual's capacity and performance. Capacity is the individual's ability to execute a

task or an action outside of the influence of the environment. Performance is seen as the

individual's ability within his/her current environment. The environment, according to

the ICF, includes the physical, social, and attitudinal context of the individual, captured

within the construct of environmental factors external to the individual, and personal

factors internal to the individual. Interactions between components are conceptualized as

a dynamic flow where changes in one component can create change in another. The ICF

identified environmental factors into 5 categories: products and technology, natural

environment, support and relations, attitudes, and services/systems/policies.

The impact of the environment as it relates to an individual's performance, and

the outcome of participation, is an important element in the comprehensive description of

rehabilitation. Rehabilitation is the health strategy that, in part, applies and integrates

"approaches which provide a facilitating environment and approaches which develop a

person's performance in the interaction with the environment" (Stucki, Cieza, & Melvin,

2007, p. 282). As such, the role of rehabilitation specialists includes modifying the

context so that it is free of barriers, and encompasses facilitating elements so that both the

immediate environment and the larger social and cultural environment promote

successful participation. This participation, as it is defined by children and youth with

disabilities, and their caregivers, includes three dimensions. These dimensions are

motivation and belonging, goal-directed action, and perceived availability of

environmental opportunities (Bjorck-Akesson et al., 2010).

Defining Social Participation

Criticism of the ICF and its implications for rehabilitation science includes 1) its failure to distinguish between the terms activity and participation (Cramm, Aiken, & Stewart, 2012) and 2) its failure to adequately distinguish between participation and social participation (Piskur et al., 2014) despite addressing factors such as personal interactions, relationships, and social attitudes.

To address this first criticism, Badley (2008) suggested reconfiguring the constructs of activity and participation into three subcomponents: 1) acts (things a person can do independent of context such as eating and talking), 2) tasks (things done in a specific context such as dressing and washing), and 3) societal involvement (primarily as related to social roles). Such a distinction, especially in regards to separating out societal involvement, is supported by parents of children with disabilities who will often identify social and psychological qualities in their definition of participation, as well as terms such as reciprocity, connecting with others, active inclusion, belonging, and membership (Beddell, Khetani, Cousins, Coster, & Law, 2011).

Levasseur, Richard, Gauvin, & Raymond (2010) further added discourse to the concept of social participation, as they analyzed forty-three definitions from the literature; these definitions mainly focused on the individual's involvement in activities that provided interactions with others in the community. From the results, Levasseur et al. proposed a taxonomy for social activities with six levels of involvement. These included: 1) doing an activity in preparation for connecting with others, 2) being with others, 3) interacting with others without doing a specific activity with them, 4) doing an activity with others, 5) helping others, and 6) contributing to society. Levels one through six are

theorized to indicate participation, where levels three through six represent social participation, and levels five and six represent social engagement. However, the distinction between participation and social participation continues to be blurred. In a recent study, parents of children with disabilities agree that social participation can vary in regards to frequency and extent of involvement; however, they stated that "just being present" (Bedell et al., 2011, p. 768) (synonymous with level two of Levasseur at al.'s taxonomy) served as a degree or level of social participation.

Researchers have also attempted to define social participation as it relates to students with disabilities in educational settings. The term social participation is often used interchangeably in the literature with the terms social integration and social inclusion (Bossaert, Colpin, Pijl, & Petry 2013; Koster, Nakken, Pijl, & Van Houten, 2009). Koster and colleagues analyzed 62 articles in the literature and found that most important to the concept of social participation was that of interactions, but that it also incorporated friendships, friendship networks, lasting relationships, playing together and social contacts. Aspects of social participation, such as peer acceptance, social status, social skills, and social interaction, were often discussed without ever referring to the umbrella term of social participation. They suggest that social participation is the most suitable concept for the social dimension of inclusion and that it encompasses four central themes: friendships/relationships, interactions/contacts, perceptions of the student with disability, and acceptance by peers (see Table 1).

Koster et al. (2009) defined social participation in the field of education as "the presence of positive social contact/interaction between these children and their classmates, acceptance of them by their classmates, social relationships/friendships

12

between them and their classmates and the pupils' perception that they are accepted by their classmates" (p. 135). This definition, however, fails to capture the social participation that can occur between students and adults in their social context (e.g. teachers, aides, lunchroom monitors, etc.) and/or with clubs, teams, or organizations that can also foster a sense of social belonging and connectedness developed through active participation in such groups and communities through membership roles.

Occupational Therapy Theoretical Framework

Occupational therapy practitioners, with "knowledge of the transactional relationship among the person, his or her engagement in valuable occupations, and the context to design occupation-based intervention plans that facilitate change or growth" (AOTA, 2014, p. S1), are in a prime position to take a leading role in discourse, implementation, and research utilizing the ICF model with its intended outcome of participation. The inclusion of social participation into the domain of occupational therapy is supported by the philosophical principles and theories of the practice that are congruent with a universalistic perspective of disablement. This perspective views one's ability on a continuum, and suggests that policies and practices should respect the range of abilities that exist (Vrkljan, 2005). Individuals of all abilities have the right to engage in valued social roles that are meaningful to them, and should be supported by their environment in acquiring them.

The ecology-based models from the field of Occupational Therapy, such as the person-environment-occupation (PEO) model (Law et al., 1996), and the Ecology of Human Performance (EHP) model (Dunn, Brown, & McGuigan, 1994) provide theoretical foundation for the profession's engagement in adapting and modifying the

environment to meet the social participation needs of individuals. Central to these ecological models is the dynamic interrelationship between the person and the environment, whereby individuals are constantly being shaped by and shaping the environment in which they are a part.

  Ecology of Human Performance. As ecology is concerned with the interrelationship between organisms and their environment, occupational therapy is concerned with the interrelationship between humans and their context, and the resulting effects on performance. Thus, the Ecology of Human Performance (Dunn et al., 1994) explores the impact that environment has in regards to level of performance and roles assumed by an individual. It stresses that human behavior and performance cannot be understood outside that of context. The environment is described in terms of its physical (nonhuman) aspects, social aspects, and cultural aspects, including temporal elements. Although individuals may share common elements, each person's contextual experience is unique and is influenced by one's sensorimotor, cognitive, and psychosocial skills and abilities, as well as their experiences. The individual cannot truly be seen unless looking through the contextual influences that surround the individual. Skills and abilities, and the relationship with the context, dictates the tasks that an individual will be able to perform within their performance range. There are five strategies for addressing individual needs. These are: 1) establishing and/or restoring ability to perform within the context; 2) modifying or adapting the contextual features or task demands to support performance; 3) alter the context to create a better fit between the individual's abilities and the task; 4) prevent problems; and 5) create circumstances that promote performance in context (Dunn et al.).

Person-Environment-Occupation Model (PEO). Employing a transactional model which emphasizes the interdependence of the person, the environment, and the occupation, the PEO model (Law et al. 1996) builds upon the understanding that behavior is influenced by and cannot be separated from the environment. The person-environment-occupation model describes the interactions of these three components, or spheres, and how they change over an individual's lifespan (temporal aspect). A person is described as a unique individual who assumes a number of different roles with varying levels of importance, duration and significance depending upon temporal conditions and the context. The environment within this model is composed of four dimensions (cultural, socioeconomic, institutional, and social/physical dimensions) that are viewed from the perspective of the person, household, neighborhood, and/or community. The third component of occupation incorporates activity, task, and occupation together, although defined separately. Analysis of congruence among these three spheres, known as the person-environment-occupation fit, equates to occupational performance (Law et al.).

Problem Statement

A major impetus for this dissertation is the uncertainty expressed by occupational therapy practitioners in addressing the social participation needs of students with disabilities in school-system practice. Occupational therapy practitioners need to have a clear conceptualization of their role in providing interventions and fostering a supportive learning environment that will enhance the social participation of students with disabilities, and provide a more inclusive learning environment for all. Current studies indicate that occupational therapy practitioners may not be prepared or have the skills necessary to implement effective change in this area. Entry-level practitioners often do

not feel ready for school-based practice (Brandenburger-Shasby, 2005), and therapists, regardless of years of experience, indicate that their primary area of interventions focus on sensory or motor impairments (Spencer, Turkett, Vaughan, & Koenig, 2006). One therapist noted that the "belief among teachers that OT just works with fine motor problems" (Beck, Barnes, Vogel, & Grice, 2006, p. 8) was an obstacle to the provision of services, and another therapist stating that occupational therapists' "psychosocial background is not always known" (p. 9). Furthermore, multiple studies reveal that occupational therapy practitioners in school-based practice are not confident in using psychosocial strategies (McDuff, Schultz, Anderson, & Pemberton, 2009; Nielson & Hektner, 2014). Parents report dissatisfaction in services provided in the area of social participation, stating that they felt occupational therapy practitioners were not addressing this area of concern or were doing so only in a limited fashion (Benson, Elkin, Wechsler, & Bryd, 2015). Occupational therapists reported role confusion, a limited knowledge base in this area, and expressed need for better preparation and continuing education in psychosocial interventions for students, along with more tools and reference materials (Beck et al., 2006). The purpose of this research is to build the repertoire of occupational therapy practitioners so that they are better prepared in the provision of services addressing social participation of students with disabilities in general education classrooms.

Study Designs and Research Questions

This dissertation entails research and results from four studies with the overall aim of identifying how occupational therapy practitioners can facilitate and support the social participation of all students with specific consideration given to those students with

disabilities. Each of the four studies utilized the design best suited for addressing its research questions; as such, different methodologies were used during the course of investigation.

Study 1: Effect of Duration of Peer Awareness Education on Attitudes Toward Students with Disabilities: A Systematic Review

Study 1 (Chapter 2), titled Effect of Duration of Peer Awareness Education on Attitudes Toward Students with Disabilities: A Systematic Review, (co-authored with Dr. Christine Myers), examined the effect of duration of a disability-awareness education program on the attitudes of peers toward students with disabilities. Thirty studies, with a combined sample size of 7,346 students, were critically appraised to find that duration of peer awareness education programs does play a role in the program's effectiveness in improving and sustaining the attitudes of peers towards students with disabilities. Moreover, elements of the programs researched were compared in order to find commonalities and strengths of successful programs. The research examined what variables within programs of longer duration were present that may have led to positive changes in attitudes towards students with disabilities.

The results of this research are important to occupational therapy practitioners looking to implement or develop a Tier I intervention aimed at the social environment of students with disabilities in which all students benefit from intervention. This study demonstrates the importance of providing practical knowledge to others in the social context, obtaining commitment through collaborative efforts with teachers and administrators, and maintaining a sustained, consistent presence through which services can be provided over time. However, as programs evaluated within the systematic review

revealed little to no involvement of occupational therapists, it was determined that a look at the current role of occupational therapy practitioners in addressing social participation was needed. This research is presented in the second study.

Study 2 - Social Participation in Schools: A Survey of Occupational Therapy Practitioners

Study 2 (Chapter 3), titled *Social participation in schools: A survey of occupational therapy practitioners*, was completed in conjunction with Dr. Christine Myers, and Dr. Colleen Schneck. Using survey research methodology (Dillman, Smyth, & Christian, 2009), 500 occupational therapists and occupational therapy assistants who were members of the American Occupational Therapy Association's Early Intervention and School System Special Interest Section, and who identified "school system" as their work settings, were randomly selected to respond to 111 items on a mailed survey. One hundred six items utilized a six-point Likert scale. The remaining five items collected information related to employment, experience, and education. The response rate was 34.95%, and represented occupational therapy practitioners from 36 states. The sample included 102 occupational therapists, and 10 occupational therapy assistants.

The purpose of this research study was to (1) identify the strategies and practices that school-based occupational therapy practitioners utilized to address the occupation of social participation, (2) describe perceived levels of competence in addressing social participation of students with disabilities, and (3) explore factors (practitioner experience and type of employment) that may impact intervention strategies and service delivery models provided for students categorized by primary disabilities (other than Autism). Social participation was defined for the participants as an "intentional interaction

involving two or more individuals centered around any mutually agreed upon activity".
This definition is supported by AOTA's (2014) practice framework that incorporates engaging with others and creating social interdependence.

Understanding current practices in how practitioners address social participation in school based practice for students with disabilities, and practitioners' perceived degree of competence, allowed for the identification of strengths and areas of need in the provision of services addressing social participation. This study contributed to findings from the systematic review (study one) dealing with types and extent of service delivery models used and the need for collaboration between team members. Other results that have implications for occupational therapy practice, and which provide a foundation for intervention and future research emerged. A need to qualitatively look at a peer-mediated intervention and the perceptions of school-based personnel implementing the principles and strategies of the program was desired; this resulted in the third study.

Study 3 - "I Never Truly Thought About Them Having Friends": Equipping Schools to Foster Peer Relationships

Study 3 (Chapter 4), titled *"I never truly thought about them having friends": Equipping schools to foster peer relationships*, was conducted under guidance and support from Dr. Harold Kleinert from the University of Kentucky and Dr. Erik Carter from the University of Vanderbilt. Study 3 utilized a phenomenological qualitative approach to investigate the "lived experience" (Creswell, 2013) of participants who attended the Kentucky Peer Support/Network Project regional and pilot site training, and who implemented the intervention in their own school. Letters of support were requested and received from five schools, and recruitment flyers were sent to project site

coordinators. A purposive sampling strategy to identify participations that could speak deeply and directly to the topic was utilized (Todres, 2005).

Questions that guided the research included (1) How did participants perceive the quality and impact of the professional development they received? (2) In what ways did participants implement what they learned about peer-mediated interventions in their own school? and (3) How did participants view the impact of this work on students and their schools? To address these questions, rich descriptions of participants' experiences and perceptions were obtained through seven extended semi-structured interviews representing four different schools, two middle and two high schools. Participants included one parent, one guidance counselor, two special education teachers, a special education director, a speech-language pathologist, and a school psychologist. Participants' unique roles provided a diverse professional outlook on the training and implementation of the peer support network project.

Themes were conceptualized using a thematic analysis of the data (Patton, 2002) and a codebook was developed with definition to ensure consistency with coding. Following analysis, member checking was conducted in which themes and interpretations of the data were provided to participants for comments. Themes were compared against the original data, and were supported by participants' direct quotes.

This study adds to the discourse in understanding what role occupational therapy practitioners have among other team members in addressing the social participation and inclusion of students with disabilities. Specifically, occupational therapy practitioners can apply results to Tier I and Tier II intervention approaches, and gain an understanding of their professional role within the team dynamic necessary for substantial and sustained

change in a students' environment to promote social participation. Results and discussion focus on the impact that the environmental context has on the implementation of the intervention, the value perceived in receiving interdisciplinary training for team members, and the overall benefits for all students in the implementation of the program. Missing from the data, however, was analysis of the perception of the student. This is captured in the final study that addressed the feasibility of using social network analysis and observation to explore dimensions of social participation as seen through student relations.

Study 4 - Feasibility of Using Social Network Analysis to Understand Social Participation: Implications for Occupational Therapy Practice

Study 4 (Chapter 5), *Feasibility of Using Social Network Analysis to Understand Social Participation: Implications for Occupational Therapy Practice,* used a case study mixed methods approach employing principles of social network analysis and ethnographic principles. Case study research is often used to understand a chosen phenomenon and to learn about its context, providing "occupational therapists with a methodology that enables the investigation of complex systems in real life" (Salminen, Harra, & Lautamo, 2006, p. 7). Furthermore, a feasibility design was utilized as no research was found in the occupational therapy literature that used social network analysis as a means of understanding the social participation of students with disabilities in the school system. The aim of the study was to investigate the feasibility of using social network analysis and observation in order to gain a greater understanding of the current factors that facilitate or hinder the social participation of students with disabilities in inclusionary settings.

A purposive sampling of a seventh grade classroom including 60 students was selected based off the specific characteristics of the class including students with and without disabilities, and the schools interest in developing a more inclusive environment by implementing a peer program shown to be effective at building relationships between all students (Study 3). The class included two students that required a paraprofessional and who received educational services both within special education and general education classrooms.

Quantitative data was collected through a Qualtrics questionnaire that was used to complete a social network analysis. Parent consent and signed assent was received by 71.67% of the whole network (43 out of 60). The analysis of data collected looked at variables of centrality and cohesion. This information is important as one's "position in a network determines in part the constraints and opportunities that he or she will encounter" (Borgatti, Everett, & Johnson, 2013, p. 1). For those who were unable to complete the social network analysis independently, observations were used to supplement the data.

Qualitative data was collected in conjunction with the social network analysis. Fifty hours of observations were made between the dates January 23, 2017 and May 18, 2017 on the interactions between students with disabilities and their social environment, as well as between students without disabilities and their social environment. Observations occurred across multiple school contexts (e.g. classroom, hallways, cafeteria, library etc.) during school hours. Field notes were taken to record data, and to engage in continuous reflexivity. In addition to the observations, qualitative data was collected through short answer responses on the Qualtrics questionnaire. This was

included in order to gain students' subjective experiences and to increase the authenticity of the research in incorporating the voices of students as research 'collaborators' rather than the study 'object' (Grover, 2004).

Findings suggest the need for occupational therapy services provided in the area of assessing and modifying the physical and social environment, collaborating with key partners, and targeting access and barrier issues. Themes that emerged included (a) opportunities designed and opportunities mixed, (b) mixed messages, and (c) art of initiation. Social network analysis provided visualization and data output on the core-periphery structure across three resulting networks of friendship, positive relations, and negative relations. Implications for occupational therapy practice and feasibility of social network analysis in this area are discussed.

Dissertation Overview

Chapters 2 through 5 provide the basis for understanding the role of the occupational therapy practitioner in addressing social participation of students with disabilities in the schools, as well as providing insight into intervention strategies that lead to success in this area. Furthermore, these chapters are uniquely crafted to gain the perspectives from multiple different points of view including the literature (Chapter 2), Occupational Therapy practitioners (Chapter 3), school team members (Chapter 4), and the students themselves (Chapter 5). Chapter 6 is provided as a synthesis with a focus on the specific implications that these studies hold for occupational therapy practitioners, and how this research fits in with the profession's current body of knowledge. This final chapter also includes additional lines of research and areas of investigations beneficial to this area of study.

Table 1: Social Participation (adapted from Koster et al., 2009)

Friendships/ Relationships	Contacts/ Interactions	Perception of Student with Disability	Acceptance by Peers
• Friendship network • Mutual friendship	• Playing together • Working together on tasks • Participation in group activities • Initiations • Social isolation	• Self-perception of peer acceptance • Satisfaction at school • Social self-concept • Self-perception of social competence • Loneliness	• Social preference • Social support • Bullying • Social rejection

Chapter 2: Effect of Duration of Peer Awareness Education on Attitudes Toward

Students with Disabilities: A Systematic Review[1]

Abstract

The attitudes of peers towards fellow students with disabilities impacts social participation and the development of relationships within the school context. This systematic review examined the effect of duration of a disability-awareness education program on the attitudes of peers towards students with disabilities. Sources such as the Academic Search Premier, CINAHL, Education Full Text (H.W. Wilson), ERIC, and Teacher Reference Center were searched, and yielded thirty studies with a combined sample size of 7,346 students that met the inclusion/exclusion criteria. These were critically appraised for quality using the Downs and Black Quality Index (1998). Implications for disability-awareness program development emerged, as well as an expanded role for occupational therapy practitioners to assess the social context in inclusionary settings. Future research should address other program elements to determine best practice in facilitating positive peer attitudes towards students with disabilities in order to promote social inclusion.

Introduction

The American Occupational Therapy Association (AOTA, 2014) identifies social participation as one of the eight primary categories within Areas of Occupation that a client might engage, identifies social interactions as a Performance Skill along with motor and process skills, and clearly defines the social environment as one in which daily

---

[1] Republished with permission from Taylor & Frances from Leigers, K.L. & Myers, C. T. (2015). Effect of duration of peer awareness education on attitudes toward students with disabilities: A systematic review. *Journal of Occupational Therapy, Schools, & Early Intervention, 8*, 79-96. Permission conveyed through Copyright Clearance Center, Inc.

life occupations occur. Despite this, the role of school based occupational therapy practitioners addressing the social needs of students with disabilities in the literature is limited. For children, peer interactions most commonly occur in the school environment. However, students with disabilities report greater social isolation, greater levels of rejection, and fewer reciprocated friendships than their same-aged peers at school (Altschuler, Mackelprang, & Baker, 2008; Avramidis, 2010; Nadeau & Tessier, 2006; Symes & Humphrey, 2010; Vance & Eiser, 2002). From their peers' perspective, relationships are often difficult to form due to feelings of fear, lack of preparation, and alienation. Statements such as *"Sometimes I didn't see them as people," and "I was scared to touch them"* illustrate their perception (Whitehurst & Howells, 2006, pp. 41-42).

Through the Individuals with Disabilities Education Act (IDEA), state laws, and several judicial and educational actions, there is a greater emphasis on inclusionary classrooms to educate students with disabilities in a least restrictive environment. However, conflicting research makes it difficult to determine if this is in the best interest of all students. The benefits of inclusionary classrooms on the social participation of children with disabilities include increased levels of friendship and tolerance, and decreased levels of abusive behavior and peer rejection (Bunch & Valeo, 2004; Laws, Bates, Feuerstein, Mason-Apps, & White, 2012). However, placement itself does not promote socialization or lead to social inclusion (Kennedy, Shulka, & Fryxell, 1997; Sale & Carey, 1995; Nowicki & Sandiesen, 2002; Brinker & Thorpe, 1986). Equality is not achieved as children with disabilities tend to have a less favorable social position than their peers (Ruijs & Peetsma, 2009). Interactions that do occur between children with and

without disabilities tend to be on a superficial level, and not interactions that involve personal commitment or choice (Siperstein, Parker, Bardon, & Widaman, 2007). Frequent contact with individuals with disabilities is not a factor associated with attitudes or behaviors (Bossaert, Colpin, Pijl, & Petry, 2011; Gannon & McGilloway, 2009; Plata, Glasgow, & Trusty, 2005; Siperstein, Parker, Bardon, & Widaman, 2007), and may in fact strengthen previously formed negative stereotypes by highlighting academic struggles and failures (Siperstein, Parker, Norins, & Widaman, 2011). Direct contact is only effective in changing stereotypes held by peers when coupled with disability-specific information, joint activities between students with and without disabilities, and having adult monitors (Marom, Cohen, & Naon, 2007). In cases where students without disabilities were educated about an incoming student's disability, the experience was described as positive (Prellwitz & Tamm, 2000).

Peer social relations and social participation between students with disabilities and their peers is vital to academic success. First, children with disabilities who value and have peer support often have better psychosocial and functional outcomes (Richardson, 2002). Students with disabilities who participate and are included more in regular educational settings are more likely to do well towards the end of their academic careers (Reschly & Christenson, 2006; Ryndak, Ward, Alper, Montgomery, & Storch, 2010). Regardless of disability, increased participation in regular education settings increases the likelihood that a student with disability will live independently upon exiting school (Sun, 2007). Second, peers benefit from social participation with students with disabilities. Raising awareness of one disability may increase awareness of disability across the spectrum (Campbell, Gilmore, & Cuskelly, 2003). This creates a greater ability to

understand and work with diverse individuals. Third, improving relations between students with disabilities and their peers may help to combat bullying (Bourke & Burgman, 2010). The rate of bullying is higher for children with disabilities (Norwich & Kelly, 2004; Symes & Humphrey, 2010) and children with disabilities report that having friends provides support, safety, and protection. When children with disabilities lack peer friendships, it increases their vulnerability to bullying (Bourke & Burgman, 2010).

Occupational therapists are in a prime position to address the relationships between children with disabilities and their peers in the classroom. Through evaluation of social participation, and interventions that not only address the student with the disability, but their physical and social environment, occupational therapists have the skills necessary to address occupational justice for students with disabilities. Occupational justice implies that individuals have the right to experience meaning within their roles, are able to engage in activities of social inclusion, can make choices in their life, and receive equal privileges for their engagement (Townsend & Wilcock, 2004). The profession of occupational therapy affirms these right to access and fully participate in society (AOTA, 2004). The World Federation of Occupational Therapists (WFOT), furthermore, states that occupational therapy is a profession that strives to enable individuals to realize their potential, develop meaning in their life, and advocate for ability. Specifically, it is stated that the "right to inclusive education is paramount and non negotiable." (2008, paragraph 2). As students with disabilities fail to be fully socially included within the school environment, they are often marginalized and disparaged by peers (Baglieri & Knopf, 2004). Occupational marginalization occurs when individuals lack the power to exercise occupational choice (Wolf, Ripat, Davis, Becker &

MacSwiggin, 2011). Due to the barriers of stigmatizing attitudes and beliefs, students in public schools can experience occupational marginalization through limitations in peer engagement and when they feel unable to fulfill a role of contributing member to the classroom.

Successful social inclusion of children with disabilities has been linked to a number of factors including gender (Laws & Kelly, 2005; Vignes et at., 2009), grade level (Vignes et al., 2009), knowledge of disability (Siperstein, Parker, Norins, & Widaman, 2011; Vignes et al., 2009), and type of disability (Siperstein et al., 2011; Odom et al., 2006). Attitudes towards individuals with disabilities, as a part of the social-cultural dimension of the environment (Godeau et al., 2010), have great impact on one's intent to participate in inclusive physical education activities with students with severe disabilities (Verderber, Rizzo, & Sherrill, 2003). One way proposed to positively impact the attitudes of peers towards students with disabilities is the use of formal peer education that increases disability awareness. Such an approach has been used within school systems; however, there is no standardized, accepted practice in guiding these programs. As a result, multiple and varied approaches exist with little research that examines their effectiveness. Research that does exist tends to look at the effect of the program as a whole and does not address specific program variables to find which program elements are most critical for program success. One such element is that of the duration of the intervention. This systematic review aims to address the question: What is the effect of duration of formal awareness education on peers' attitudes toward students with disabilities in the elementary school setting?

Method

Search Strategy

A thorough search of the literature was completed in both medical and educational databases including Academic Search Premier, CINAHL, Education Full Text (H.W. Wilson), ERIC, and Teacher Reference Center. Search terms were based on words that arose out of the targeted question and were intentionally left broad in order to capture all possible forms of peer education. Searches were made for *education, reentry, program, awareness,* and *intervention.* To define the client group, key words were (*disab*, condition* or *disease*) and (*child*, youth,* or *peer**). Outcomes were searched by key word *attitud**. As indicated, some key words were truncated to allow a broader search over various endings of words. The search was narrowed by excluding words that led to high incidences of off-topic articles. These words included *weight, smoking, nutrition, alcohol, immuniz*, vaccine, career, college, nurs*, sex**, and *dental.*

Inclusion and Exclusion Criteria

All searches were limited to peer-reviewed journal articles in the English language. No date restrictions were implemented. To be included, the studies had to involve formal peer education programs presented within the school environment (K-12) to students without disabilities, and assess peer attitudes towards students with disabilities. Studies were excluded if the research examined informal education such as that obtained through unstructured general contact, peer buddy systems, one-on-one tutoring, or a peer-led structure. Programs that were conducted in non-school settings, or that only measured

increase in knowledge, understanding or health literacy, were also excluded. Studies also had to have either a control group, or had utilized a pretest-posttest comparison.

Extraction Procedures

Due to the necessity of using inclusive search terms as the literature came from different fields of study, multiple hits were received. Utilizing title review in which key words and/or phrases were used to positively identify those studies that clearly did not meet inclusion/exclusion criteria, 227 articles were found for a thorough abstract review. From these, 39 articles underwent article review. Nine additional articles were excluded based on criteria, and four articles were omitted as duplicates. An additional four articles were acquired through reference chasing. This resulted in a total of 30 articles to be evaluated for methodological quality (Table 1). The number of articles found at various stages, and the reasons for exclusion are shown in Figure 1. The first author summarized pertinent information (e.g. research design, level of evidence, Downs and Black quality index score, sample size, assessments, results, disability addressed, and duration of intervention), and the second author confirmed all studies met the selection criteria.

Data Analysis

Duration of intervention utilized in each study was calculated based upon the number of minutes students were engaged in a formal disability awareness education. Time spent doing outside-group work, transitioning, and taking assessments was not counted toward duration. The Quality Index instrument, developed by Downs and Black (1998), was modified and used to assess study quality of the thirty articles found through the literature search.

Results

Methodological Quality Evaluation

The Downs and Black (1998) Quality Index is an instrument that assesses both randomized and nonrandomized studies. It provides an overall study quality score and a profile of scores for reporting, external validity, internal validity for bias, internal validity for confounding, and power. There are 27 items, all but two of which are scored either a one for "*yes*" or a zero for "*no"* or *"unable to determine."* Twenty-three of the items could be asked of any intervention, but three questions are topic sensitive and related to known confounders, main outcomes, and the sample size required for clinically and statistically significant results. The Quality Index scale shows high internal consistency ($\alpha = 0.89$) for both randomized and nonrandomized studies, high test-retest reliability ($r = 0.88$), high criterion validity correlates ($r = 0.90$, and good inter-rater reliability ($r = 0.75$) (Downs & Black, 1998). As has been done in other reviews using the Downs and Black scale (Chudyk, Jutai, Petrella, & Speechley 2009; Hooper, Jutai, Strong, & Russell-Minda, 2008), the tool was modified so that item 27 received either 0 or 1 point depending upon whether a power calculation or sample size calculation was present. Thus, the maximum number of points that a study could receive on all items of the Downs and Black Quality Index for this systematic review is 28. Score totals were grouped into the following four quality levels: excellent (24 to 28 points), good (19 to 23 points), fair (14 to 18 points), and poor (13 or fewer points). Each author scored the articles using the Quality Index instrument separately. Inter-rater agreement was

calculated by (number of agreements - number of disagreements)/total number of items reviewed. The result was 86.5% agreement. Discrepancies were resolved based on mutual agreement following discussion of each item in question. The Quality Index average score for all articles was 19.4 with a range of 14 to 24 points. Based on Downs and Black Quality Index, three studies were deemed to be of excellent quality; 16 studies were classified as good; and 11 studies were fair.

Discussion

A relative trend within the analysis suggests that increased duration of a disability- awareness education program does influence the attitudes of peers towards students with disabilities in a positive direction. This is supported by studies (Favazza, Phillipsen, & Kumas, 2000; Reina, Lopez, Kimenez, Garcia-Calvo, & Hunter, 2011; Rilotta & Nettelbeck, 2007) that demonstrated greater positive attitude outcomes in longer duration interventions when comparing similar programs of varying duration. Interventions of short duration produced negative effect sizes (Rilotta & Nettelbeck, 2007; Swaim & Morgan, 2001). Examining the nature and quality of the studies is beneficial in determining why increased duration tended to provide for better outcomes. Review of the included studies suggests that this trend may be related to: 1) the provision of practical knowledge, 2) the commitment of teachers and administrators, and 3) increased learning as a result of increased exposure to instructional material.

In regards to intervention approach, providing peers with *knowledge* about the *disability* is one way to raise awareness. However, practical knowledge, as opposed to factual knowledge, appears to be a key component in increasing the level of confidence at which peers are able to communicate and work alongside students with disabilities (Whitehurst & Howells, 2006). Addressing the practical knowledge needed in order to

33

form more positive attitudes towards students with disabilities may be more achievable in interventions of longer duration. Studies of longer duration presented more opportunities for students to explore, reflect on, and express their *feelings* regarding their peers with disabilities. Studies that showed higher effect sizes were those that allowed student time to focus on the typicality of individuals with disabilities (Cameron & Rutland, 2006), discuss the similarities between children with and without disability (Martinez & Carspecken, 2006), interact with peers with disabilities in structured activities (Clunies-Ross, & O'Meara, 1989; Favazza, Phillipseen, & Kumar, 2000; Ison et al., 2010; Leyser, Cumblad, & Strickman, 1986; Rilotta & Nettelbeck, 2007), and explore the feelings of students with disabilities (Clunies-Ross & O'Meara, 1989; Ison et al., 2010).

In fact, presenting only factual information may lead to negative results. Swaim and Morgan (2001) found that students had less favorable attitudes towards children with autism after viewing a brief informational video without the opportunity to engage in discussion or ask questions compared to students who did not have any information on autism. Similarly, more negative attitudes towards physical disabilities were also noted in children who had received a short informational intervention on cerebral palsy (Laws and Kelly, 2005). Such outcomes highlight the benefit of discussion groups following interventions; discussion groups were a crucial element in many of the studies that elicited a greater effect size (Cameron & Rutland, 2006; Favazza, Phillipsen, & Kumar, 2000; Clunies-Ross & O'Meara, 1989).

In addition, providing practical knowledge on how individuals with disabilities are similar is a crucial element. Martinez and Carspeken (2006), using story-telling to elicit changes in attitudes, found that attributes not related to the disability were the most

important influences in students deciding if they would befriend the character with special needs. Interventions had a greater positive effect when they demonstrated the ability of the student over their disability. This highlighted the student's role as an equal participant. Several studies emphasized the use of joint, non-competitive activities under supervision that maximized rather than limited participation of all students (Favazza & Odom, 1997; Marom, Cohen, & Naom, 2007).

Increased duration also indicates a greater commitment made by school teachers and administrators in embracing an awareness education program. The "Just Like You" program (Ison et al., 2010) was tied to the school curriculum in the content areas of Human Society and its Environment and through Personal Development, Health, and Physical Education. Interventions completed in the classroom effectively provided teachers with information at the same time that they were informing the students. Negative attitudes of teachers and insufficient administrative support are barriers to successful inclusionary practices (Orr, 2009). Teachers that are trained how to work with students with disabilities are more likely to have an accepting attitude of students with disabilities (Pearson, Eva, Ernest, & Wong, 2003). Students within the program may also equate a program of longer duration with a subject of greater importance, effectively noting the commitment in time that the instructor and school are providing.

Increased duration provides students with opportunities to engage in various issues of diversity, in-depth discussions and hands-on learning. Time allows instructors to reach students through multiple approaches, engaging multiple different types of learners. Multiple studies found that a combination approach was more effective than any single method (Favazza, Phillipsen, and Kumar, 2000; Ison et al., 2010; Salend & Moe, 1983).

A disability awareness program must use a combination of approaches that are empirical and theoretically based in order to be successful in changing attitudes (Leyser, Cumblad, & Strickman, 1986). Doing so will encourage students to be active learners, requiring them to consider the issues of disability more closely (Reis, 1988). Greater duration may also lead to longer lasting effect. Studies that looked at the longitudinal effect showed that an intervention duration of 450 minutes continued to show retention in the experimental group eight years later (Rilotta & Nettlebeck, 2007) as opposed to a 13 minute intervention which demonstrated a positive increase in attitudes during immediate posttest, but did not show retention nine days later (Westervelt & McKinnley, 1980).

The importance of fostering positive attitudes in children towards their peers with disability is important for both the social and academic success of children in school. The role of the occupational therapist in developing programs to support social integration and acceptance is one developed through collaborative processes with regular and special education teachers, parents, counselors, psychologists, and others invested in creating a safe, learning environment for all students. Implementing programs aimed at promoting positive attitudes is beneficial to schools regardless of preexisting attitudes of students, and the current level of opportunities for children to interact with peers with disabilities (Clunies-Ross & O'Meary, 1989). These interventions should be planned, intensive, purposeful, and sustained over a period of time (Trepanier-Street & Romatowski, 1996), as well as promote empathetic understanding (Colwell, Thompson, & Berke, 2001).

Impact of study quality on systematic review

The current systematic review is impacted by the current available body of research. Study limitations included: 1) A lack of a rationale provided regarding

development and use of the intervention approach; 2) Inconsistency in controlling for or reporting on important variables, including sample size, potential confounding variables, and bias; and 3) A lack of a widely accepted assessment measuring attitudes towards peers with disabilities. These limitations in the research literature affect the quality of reporting and of the subsequent results of the systematic review. For example, while several studies indicated the theory that drove their intervention such as the social cognitive theory (Cameron, Rutland, & Brown, 2007), the cognitive behavioral approach (Ison et al., 2010), and the consistency theory (Clunies-Ross & O'Meary, 1989), others provided little information regarding the origins or justification for using specific approaches. In terms of study design and reporting, information important in critically appraising and acquiring information was missing from multiple studies. Specific examples include failure to report sample size at various stages in the study, duration of intervention, participant demographics, a limited sample population, a lack of randomization, and a lack of a control group.

Multiple assessments also impact the quality of this systematic review. Across the thirty different studies, 25 different assessments were utilized. Only one instrument, The Acceptance Scale (Voeltz, 1980), or an adaptation of this assessment, was utilized in six studies; the Peer Attitudes Toward Handicapped Scale (Bagley & Greene, 1981), Adjective Checklist (Siperstein, 2006), Disability Factor Scale (Siller, Ferguson, Vann, & Holland, 1967), and Attitudes Toward Disabled Persons (ATDP) (Yukor, Block, & Young, 1970), were used in two studies each. In a review of common instruments utilized to measure attitudes towards peers with disabilities, only the Acceptance Scale (Voeltz, 1980) and the Chedoke-McMaster Attitudes Towards Children with Handicaps

Scale (Rosenbaum, Armstrong, & King, 1986), which was only used in one study, are

designed to measure the affective, behavioral, and cognitive components of attitude

(Vignes, Coley, Grandjean, Godeau, & Arnaud, 2008). The majority of other instruments

are unidimensional in design.   Though the majority of the instruments used to assess the

main outcome within the studies were appropriate, studies that utilized a multi-

dimensional approach were able to further discuss relevance of their findings in terms of

attitude component.

Limitation of the Current Study

The primary limiting factor associated with this study is the wide array of

interventions covered under the variable of a formal disability-awareness education

program. Though all interventions met the inclusion/exclusion criteria, formats varied

across research studies. As the body of research grows in this area, a systematic review

that compares elements within one single structured intervention approach across

multiple studies would be valuable. A second limitation is its measurement of duration

only. Duration does not take into account intensity or frequency. It is not possible to

ascertain whether programs completed in a short, but intense fashion, were more or less

effective at influencing the attitudes of peers rather than less intense programs completed

over longer periods. Thirdly, this study does not take into account the many other factors

influencing attitudes of children towards peers with disabilities. A cross analysis of

variables would provide additional information to see if other variables impact the needed

duration for a program to be seen as effective. Finally, the possibility of publication bias

cannot be ruled out, which suggests that studies yielding significant findings were more

likely to be published than those with non-significant findings.

Implications for Practice

Occupational therapists in the school setting evaluate the social environment's impact on occupational performance of students with disabilities. Occupational therapists are specifically trained in looking at the social environment, as well as tailoring interventions to meet the needs of an individual, population or organization. Occupational therapy skills of facilitating group interactions, consulting with other professionals, understanding the relationship between physical and social environment, and modifying tasks are necessary in reaching specific goals aimed at adapting the socio-cultural environment, and improving inclusionary practices within the school system. The results of this study can be used by occupational therapists to promote better practice in the development and implementation of disability awareness programs.

Specifically, the results suggest that occupational therapists should consider the duration of disability awareness education so that programs have time to provide practical knowledge to students regarding what it *feels* like to have a disability, and what they can specifically *do* to facilitate increased interaction with their peers with disabilities. This combined emotional – behavioral approach should include discussions that highlight the ability and social contributions of persons with disabilities. Occupational therapists are collaborators who can work with teachers, staff, and administrators in creating a safe climate that promotes participation and equality among all students.

Recommendations for Future Studies

Investigation of the relationship between social participation and peers' attitudes towards classmates with disabilities is complex. Future studies should describe and study the relationships between these variables. Longitudinal studies are also needed to examine if changes from awareness programs are sustained over a period of time. Longitudinal studies will also help to define if effective intervention requires periodic updates in order to maintain positive attitudinal changes. The relationship between attitudes or intention to interact with actual behavior of a peer towards a student with a disability should be examined as well. Finally, the development of a specific intervention that provides flexibility to meet multiple needs, yet structured so that it can be systematically studied would be an important resource to the field of occupational therapy in order to address the social needs of children in inclusionary classrooms.

Conclusion

Research on the use of formal peer education to address the attitudes of elementary school children towards classmates with disabilities is patchy, limited in context, and non-linear in its development. Published research exploring one standardized program over multiple contexts is limited; and the multiple single research studies address a wide variety of approaches. Although this systematic review suggests that increased duration is one element of a successful intervention, further research is needed to support and confirm this finding.

The role of the occupational therapist in the public school system is to provide services to children with disabilities so that they receive an appropriate education. As part of this role, occupational therapists need to ensure that children are placed in an environment that supports their educational success. Adapting or modifying the current

context in order to support performance in the natural and least restrictive setting is the goal. Often neglected in this process is the social environment, which can serve to either support or marginalize the child with a disability among his typically developing peers.

Students with disabilities do not own the sole responsibility for becoming socially included; it must be a joint effort between all involved. Peers play a vital role in creating a sense of belonging for all students. Through informative education utilizing an effective format, children can be taught the skills necessary to work and learn with students with disabilities. By including *all* children in this process, occupational therapists can encourage a context in which the perception of equality is encouraged.

Table 1: Study Characteristics

Level of Evidence as recommended by Sackett, Rosenberg, Gray, Haynes, and Richardson, 1996

Author, year	Research Design	Level of Evidence	Quality Index Score	Sample Size	Assessment(s)	Results Summary	Estimated duration in minutes
Baker, Rude, Sasso, & Weishahn, 1994	Three group (control, BUDY, KOB) x 3 group (second, fourth, and sixth grade)	II	17	540 second, 604 fourth, & 325 sixth graders in CO	Adapted Acceptance Scale	No significant differences found on change scores for total scale. Differences noted within items	60
Cameron, Rutland, & Brown, 2007	Three group (control, extended contact, multiple classification) x 3 group (nondisabled, learning difficulty, physically disabled)	I	22	71 children ranging in age from six to nine	Rating scale	More positive attitudes towards the out group was seen in the extended contact condition than in the control. No statistical difference between the control and the multiple classification intervention	120
Cameron & Rutland, 2006	Three-group, pre-post test.	I	24	67 Students (ages 5 to 10) from south-east England	Multiple-Response Racial Attitude Measure (adapted)	Outgroup attitudes significantly improved in neutral and intergroup conditions.	120
Clunies-Ross & O'Meara, 1989	Two-group, pre-post test	I	21	30 fourth-grade students from Melbourne suburbs	PATHS	Experimental groups displayed significantly more positive attitudes on PATHS.	360
Colwell, 1998	Four groups (control, video, video/label, video/label/ information), pre-post test	II	17	95 elementary band students	Adapted Disability Factor Scale	No statistical significance	15
Colwell, Thompson, & Berke, 2001	Three group (control, information-based, simulation based), pre-post test	I	18	198 fourth and fifth graders in a music class from a southwestern city.	questionnaire modeled after the Disability Factor Scale	No significant differences noted among treatment groups; slight increase seen in the simulation-based treatments as opposed to information based and contact-control groups.	45

Table 1 (continued)

Donaldson, Helmstetter, Donaldson, & West, 1994	one group, pre-posttest. Three of the seven classrooms received posttest only to control for confounding effects of pretesting.	III	20	142 nondisabled students in seven tenth-grade classrooms in urban community in US	The Acceptance Scale: Secondary Level (Version B)	Short term improvements in attitudes were noted on the posttest when compared with the pretest. These gains were maintained in a six-month follow up that looked at students attitudes.	220
Ellerton & Turner, 1992	One group, pre-post test	III	16	64 students within Nova Scotia, Canada	Questionnaire (Likert-type scale)	No statistical significance. Slight decrease in attitude scores noted for fourth and fifth graders.	Duration not provided
Favazza & Odom, 1997	Three group (control, low contact, high contact), pre-post test	I	22	46 kindergarteners	Acceptance Scale for Kindergartners (ASK)	Intervention promoted positive attitudes	945
Favazza, Phillipsen, & Kumar, 2000	4 groups (play only, stories only, play and stories, control), with pre/post test	I	22	57 kindergarten children with a mean age of 67.	Acceptance Scale for Kindergarten – Revised	Intervention had positive impact on attitudes of children, with exposure to the whole program demonstrating both short and long term gains.	270 (play); 360 (stories); 630 (play and stories)
Fiedler & Simpson, 1987	3 group (categorical curriculum intervention group, noncategorical curriculum intervention group, control), pretest/posttest	I	22	90 subjects from six eleventh grade social study classrooms	St. Joseph Curriculum-Based Attitude Scale (STJCBAS) and the Attitudes Toward Handicapped Individuals Scale (ATHI) – Modification of ATDP.	Results support the efficacy of informational presentations in promoting positive attitudes towards individuals with disabilities. The Categorical Curriculum resulted in more positive attitudes than the noncategorical approach.	500 min.
Gannon & McGilloway, 2009	One group, pre-post test	III	17	118 third and fourth graders from Kildare, Ireland.	Attitude Questionnaire (AQ)	No statistical significance	10 min.

Table 1 (continued)

Gilfoyle & Gliner, 1985	Two group (experimental and control) with pre/post test.	II	14	172 fourth, fifth, and sixth graders from three elementary schools in Colorado	Survey About Handicaps	No statistical significance on personal feelings	Duration not provided
Godeau, Vignes, Sentenac, Ehlinger, Navarro, Grandjean & Arnaud, 2010	2 group (intervention and control), pre-post test	I	24	1509 students from twelve paired schools - all in the 7th grade	Chedoke-McMaster Attitudes Towards Children with Handicaps Scale (CATCH)	No statistical significance	Duration not provided
Hutzler, Fliess-Douer, Avraham, Reiter, & Talmor, 2007	2 group (active simulation v observational experience) with pre-post test	II	19	75 children from grades 7 - 9; and 121 students in the 10th grade	Attitudes towards Peers with Disabilities	Simulation activities positively increased attitudes. Observation had positive effects in cognitive and behavioral, but decrease in the affective domain.	90 (simulation); 60 (observation)
Ison et al., 2010	One group pre-post test. Mixed-method study.	III	18	147 students (ages 9–11) in 3 schools in, Australia	Questionnaire	Improvement in attitudes toward individuals with disability seen.	180
Laws & Kelly, 2005	Two-group, pre-post test	II	22	202 Students (ages 9 – 12) in mainstream class in UK	Peer Attitudes Toward Handicapped Scale (PATHS)	Mixed results depending on type of information received.	5
Leyser, Cumblad, & Strickman, 1986	2 group (control v. experiment), pretest-posttest	II	19	281 fourth and fifth grade students in five rural public schools	Attitude Toward Disabled Persons (ATDP) scale	Intervention was effective in facilitating positive attitudes of elementary students toward those with disabilities.	1200

44

Table 1 (continued)

Marom, Cohn, & Naon, 2007	Two group; non-equivalent control group design	II	20	170 students in Israel	Attitudes Towards Children with Disabilities (ATCD)	Improvement in attitudes noted in experimental groups	1005
Martinez & Carspecken, 2006	Two-group pre-post test. Multi-method study.	I	24	78 third & fourth graders in an urban southwestern school, predominately Latino	Acceptance Scale	Statistically significant positive results on attitudes toward peers with disabilities.	270
Pivik, et al, 2002	Two group (control/experimental); pre-post test	II	20	60 children in grades 4-6	Children's Social Distance from Handicapped Persons Scale	No statistical significance	30
Reina, Lopez, Kimenez, Garcia-Calvo, & Hutzler, 2011	2 group (6 day intervention, v 1 day intervention), pre-post test	II	21	344 Spanish physical education students ages 10-15	modified version of Attitudes Toward Disability Questionnaire (ATDQ)	Significant time effects in all subscales noted with the 6 day didactic intervention as opposed to one day awareness unit.	Duration not provided
Reis, 1988	3 groups (active story format, passive story format, control story format	I	19	60 fourth graders from one public school in New York City	Social Distance (SDIS); Integration-Segregation (INSE) scales from the Multi-Dimensional Attitude Scale on Mental Retardation	More favorable attitudes were found in children who had participated in the intervention versus the control.	25

Table 1 (continued)

Rilotta and Nettelbeck, 2007	2 group (experiment and control) x 3 (age group - year 6, year 8, past students)	II	18	259 participants	Attitudes Toward Persons with an Intellectual Disability Questionnaire	More favorable attitudes seen in programs of longer duration	135 (three sessions); 360 (eight sessions); 450 (ten sessions)
Salend & Moe, 1983	Three group (control, books only, books and activities), pretest-posttest	I	19	240 fourth, fifth, and sixth graders from four schools in NJ.	Personal Inventory for Children (PAIC)	More positive attitudes towards peers with disabilities in books and activities group compared to control group or books-only group.	Duration not provided
Smith-D'Arezzo & Moore-Thomas, 2010	One group, pre-post test.	III	14	14 Students (ages 10-11) at a medium urban elementary bordering a northeastern city	Adjective Checklist	No statistical significance. Intervention may have reinforced negative attitudes	160
Swaim & Morgan, 2001	Three group (no autism, autism/information, autism)	I	23	233 children from metropolitan area	Adjective Checklist	No statistical significance between autism only group and autism with information group.	2
Trepanier-Street & Romatowski, 1996	One group, pre-post test	III	14	71 kindergarten and first grade children in metropolitan area	Attitude inventory	No substantial difference between pre and post test; trends suggest positive changes.	Duration not provided
Voeltz, 1982	Three group (control, low contact, high contact), pre-post test	II	20	817 students in grades 4 through 6	Acceptance Scale	Higher acceptance levels at schools with the program	Duration not provided
Westervelt & McKinney, 1980	2 group (experiment and control), pre and post test	I	16	46 fourth grade students	Social Distance Questionnaire and Activity Preference Scale	Significant intervention effect on immediate posttest to individuals in wheelchairs, but not to those in braces/using crutches. Effects not maintained for posttest administered nine days later.	13

Figure 1: Selection Process of Studies Included in Systematic Review
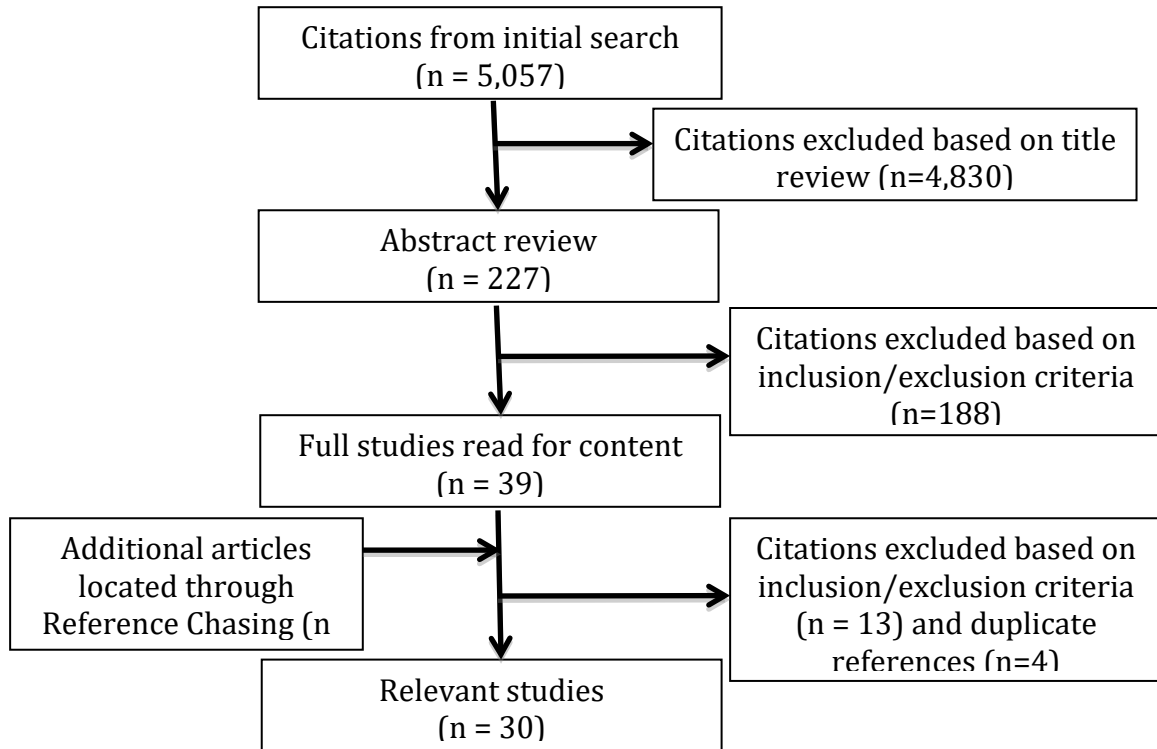
Chapter 3: Social Participation in Schools:

A Survey of Occupational Therapy Practitioners[2]

Abstract

Objective: We sought to identify strategies and practices that school-based

occupational therapy practitioners use in addressing social participation, their perceptions

of competence, and factors influencing their strategies and practices. *Method:* Surveys

were sent to 500 randomly selected members of the American Occupational Therapy

Association's Early Intervention and School Special Interest Section; 112 usable surveys

were received from 36 states. *Results:* Respondents reported focusing on internal client

factors when addressing social participation. Fewer than half (46.5%) indicated that they

understood their role (mean [*M]* = 4.23, standard deviation [*SD]* = 1.22), and 57.1%

desired greater understanding or ability (M = 4.64, SD = 1.29). Differences were found

based on years of experience, service delivery model used, and services provided by

diagnosis category. *Conclusion:* School-based occupational therapy practitioners may

need to expand their current practices in addressing student social participation. Findings

may be used to develop interventions to address this area of practice.

Introduction

Students with disabilities spend a large part of their day within the educational and

social structure of public or private schools. Individual client factors as well as the

physical and social environment influence level of participation within the school

context. Research clearly demonstrates that the level of participation in common school

roles and activities for students with disabilities is limited compared with that of same-

age peers (Coster et al., 2013; Raghavendra, Olsson, Sampson, McInerney, & Connell, 2012). Commonly identified accessibility barriers for students with disabilities are lack of environmental modifications, student's physical condition, negative peer attitudes toward those with disabilities, constructed environmental barriers, nature of the activity, and timing or scheduling of the activity. A metasynthesis of 15 qualitative studies revealed that adult and peer understanding of individual abilities and needs, decisions about accommodations, and quality of services and policies most strongly influenced youths' participation (Kramer, Olsen, Mermelstein, Balcells, & Liljenquist, 2012).

Social participation is an important component of the education process because it can support or hinder learning outcomes. Students have reported that forming positive relationships with peers and teachers improves their sense of safety and belonging and provides an atmosphere conducive to learning (Bourke & Burgman, 2010; McMaugh, 2011). Students with disabilities are more likely to have lower social standing (Estell et al., 2008) and report greater social isolation (Orsmond, Shattuck, Cooper, Sterzing, & Anderson, 2013) than same-age peers without disabilities. Students who are not generally accepted by a peer group demonstrate more internalizing and externalizing symptoms of psychological maladjustment (DiGennaro Reed, McIntyre, Dusek, & Quintero, 2011; Klima & Repetti, 2008). Sepanski and Fisher (2011) found that 90% of school administrators believed that students' behavioral and psychosocial skills were a better predictor of academic success and school readiness than mental abilities. Thus, addressing social participation of students is important to promote academic success within the classroom.

Much discussion in the literature has examined occupational therapy's role in addressing social participation for students with autism (Case-Smith & Arbesman, 2008; Cosbey, Johnston, & Dunn, 2010; Kasari, Rotheram-Fuller, Locke, & Gulsrud, 2012; Kauffman & Kinnealey, 2015; Orsmond et al., 2013) because impairment in social communication and interactions is one of the core features of autism. However, relatively little in the occupational therapy literature describes how social participation needs of students diagnosed with other disabilities are addressed in school-based practice.

To address this discrepancy, the purposes of this study were to identify the strategies and practices that school-based occupational therapy practitioners use to address the occupation of social participation, describe perceived levels of competence in addressing social participation of students with disabilities, and explore factors (practitioner experience and type of employment) that may influence intervention strategies and service delivery models provided for students with primary disabilities other than autism. An understanding of how practitioners address social participation needs across all disability categories can provide a foundation for future research and interventions.

Method

Participants

The target population consisted of occupational therapy practitioners who were members of the American Occupational Therapy Association's (AOTA's) Early Intervention and School Special Interest Section and who identified "school system" as their work setting. Surveys were sent to 500 randomly selected practitioners from an AOTA mailing list. The response rate was 34.95%, with 5 surveys returned as undeliverable. Fifty-seven respondents did not meet the inclusion criteria because they

reported that they were neither an occupational therapist nor an occupational therapy assistant who worked in school-based practice. Four surveys were removed because more than 50% of items were unanswered. The 112 usable surveys from 36 states were completed by 102 occupational therapists (91.1%) and 10 occupational therapy assistants (8.9%). The majority of participants (56.4%) held a master's degree, followed by 31.8% with a bachelor's degree. Participants primarily reported working directly through a public school district (51.4%), as a private contractor (20.2%), or through a private agency (14.7%).

Instrument

We designed the survey questions to collect information about demographics; frequency and approach in addressing social participation in evaluations, interventions, and discharge planning; self-perception of competence; and education, and training in addressing social participation. Participants were asked to report on the frequency with which they addressed social participation for students in specific disability categories.

Survey questions were based on issues identified in the literature and the authors' personal experience as practitioners; the survey was then reviewed by 10 people from diverse backgrounds in pediatrics, school-based practice, and research. Four were occupational therapists with 1, 11, 17, and 27 yr of practice experience, with the majority of time spent in pediatric and school-based practice; 1 was an occupational therapy assistant with more than 15 yr in school-based practice; 5 were faculty members with varying degrees of concentration in pediatrics and school-based practice; 1 was a special education instructor with 11 yr of practice; and 1 was a research analyst. Revisions in wording, formatting, and question order were made on the basis of their feedback.

The final version consisted of 111 items; 106 items used a six-point Likert scale (1 = *never* or *strongly disagree,* 6 = *always* or *strongly agree*), and 5 were open response for which participants could respond to an "Other (please indicate)" prompt. The remaining 5 items collected information related to employment, experience, and education. *Social participation* was defined on the survey as "an intentional interaction involving two or more individuals centered around any mutually agreed upon activity." This definition is supported by the *Occupational Therapy Practice Framework: Domain and Process* (3rd ed.; AOTA, 2014), which incorporates engaging with others and creating social interdependence.

Data Collection and Analysis

The study was approved by the authors' institutional review board. Participants were informed of the study through a cover letter describing the purpose of the study and informing participants of the consent process. Included with the cover letter were the survey and a prestamped business reply envelope. A follow-up postcard was mailed 7 days after the initial mailing to recipients. The postcard thanked those who had returned the survey and provided a reminder to those who wished to participate but had not yet sent in the survey.

Data were collected between December 2014 and February 2015. IBM SPSS Statistics (Version 22; IBM Corporation, Armonk, NY) was used for data analysis. Descriptive statistics, frequencies, and percentages were determined for respondents' demographic information. Mean and standard deviation were calculated for strategies and practices used by occupational therapy practitioners, their perceived level of competence, and their perceived level of involvement related to specific disability categories.

Independent sample *t* tests (two-tailed) were used to examine the relationship

between experience (identified as "5 years or greater" and "less than 5 years") and type

of employment (identified as "full-time" and "part-time/PRN" [i.e., on an as-needed

basis]) with intervention strategies and service delivery models used in addressing social

participation of students with disabilities. The use of the 5-yr mark to delineate between

experienced and nonexperienced practitioners is supported by research (Case-Smith,

1994; Mitchell & Unsworth, 2005). Statistical significance (*p* value) was set at .05;

however, because of inflation of   by multiple *t* tests, a .005 level of significance

was used to reduce the chance of a Type I error.

Results

Intervention Strategies, Service Delivery Models, and Perceptions

Table 1 presents data regarding common intervention strategies and service

delivery models used by participants in addressing social participation in school-based

practice. Participants reported on their perceived level of competence (Table 2) and level

of involvement related to student disability (Table 3).

Some participants used the open response questions. Under intervention

strategies, one participant indicated an item not listed: addressing attitudes and behaviors

of volunteer caregivers in community roles (e.g., faith communities, summer camp

programs, medical professionals). Under the open response for "individuals with whom

you work," one participant indicated working with social workers; however, three others

added comments in the survey margins indicating that they also worked with social

workers. Concerning service delivery models, two participants indicated an item not

listed: addressing social participation through (1) supervision of occupational therapy

assistants and (2) pulling students with and without disabilities out of the classroom for small group interactions.

Experience and Type of Employment

Differences in intervention strategies (10 items) and types of service delivery model (10 items) based on experience and type of employment were calculated. Participants with ≥5 yr of practice experience adapted activities for increased involvement of students with disabilities in classroom-based activities with peers ($p =$ .003) and provided services on behalf of students ($p < .001$) more than those with <5 yr of experience. Participants with ≥5 yr of experience adapted activities for increased involvement in classroom-based activities ($p < .001$), adapted the physical environment to allow for greater social interaction ($p = .004$), and advocated for changes in policy and procedures to promote social participation ($p = .001$) more than those with <5 yr of experience.

Participants with ≥5 yr of experience provided services on behalf of students ($p <$ .001) and Response to Intervention (RtI) Tier 1 (classroom-based) services ($p = .004$) more than those with <5 yr of experience. *Services on behalf of the student* was defined as services conducted for the benefit of a student but that occurred outside direct interventions (e.g., collaboration and consultation with other professionals). *RtI* was defined as early identification and support of students not currently served by special education. An example of Tier 1 classroom-based intervention under RtI is a classroom-based disability awareness program to promote positive attitudes and behaviors toward those with disabilities. Participants with ≥5 yr of experience used services on behalf of students ($p = .005$) and RtI Tier 2 (small group) service delivery models ($p = .002$) more

54

than those with <5 yr of experience. No statistically significant correlations were found with type of employment (full-time vs. part-time/PRN), intervention strategy, or service delivery model.

Discussion

The results of this study indicate possible reason for concern regarding current practices in addressing social participation of students with disabilities in school-based settings. Participants' perceived competence was relatively low; fewer than half (46.5%) understood their role in addressing students' social participation needs. Sensory or motor impairments have been identified by both occupational therapists (Spencer, Turkett, Vaughan, & Koenig, 2006) and teachers (Huang, Peyton, Hoffman, & Pascua, 2011) as the primary area addressed by occupational therapy practitioners, and occupational therapy practitioners are often misrepresented as "handwriting teachers" (Cahill & Lopez-Reyna, 2013). Referrals for occupational therapy services are most often in the areas of handwriting, sensory processing, self-care, and general fine motor concerns (Argabrite-Grove, 2002), indicating a limited understanding of the occupational therapy role.

Only 36.6% of the participants in this study believed that their understanding, experience, and training gave them the skills necessary to provide social participation evaluations and interventions. Few practitioners indicated that their preservice education such as college coursework (14.3%), Level I fieldwork (7.2%), or Level II fieldwork (14.3%) addressed social participation. This finding is consistent with an earlier finding that entry-level practitioners often do not feel ready for school-based practice (Brandenburger-Shasby, 2005). Practitioners in this study most frequently reported

gaining knowledge through independent reading of professional journals (34.8%) and on-the-job training (48.2%). Such training may be insufficient, though, if it lacks characteristics of professional development necessary for increasing competence or effecting practice change (Laverdure, 2014). Recent changes to the occupational therapy program accreditation process, however, require that "at least one fieldwork experience . . . has as its focus psychological and social factors that influence engagement in occupation" (AOTA, 2012, Standard C.1.7). This change may result in occupational therapy students witnessing psychosocial-based evaluations and interventions at an increased rate.

In addition to education, experience also influenced which service delivery models participants used, particularly in conducting services on behalf of students and using RtI in classrooms and small groups. These forms of service delivery require collaboration with other professionals. Fewer than half of participants, however, indicated they would be likely to engage with special education teachers (47.7%), general education teachers (42.3%), or paraprofessionals (48.6%) when addressing social participation. One participant indicated that she did not address social participation because she felt her role was to support the goals written by the special education teacher; this response suggests a lack of collaboration during the development of student goals.

The parent–therapist relationship is also important to success (Benson, Elkin, Wechsler, & Byrd, 2015) yet, alarmingly, only 21.6% of participants indicated working with parents or caregivers. Parents have indicated interest in being more involved in collaboration; they have also expressed frustration at the lack of focus on social participation and social skill development by occupational therapists (Benson et al.,

2015). Although occupational therapists have tended to agree that collaboration is best practice, they have not often used this approach (Kennedy & Stewart, 2012).

Participants were most likely to indicate working with students with a disability (60.9%), but few were likely to work with those who have the most contact with these students—peers in general education (16.2%) and special education (27.9%). Students with high-incidence disabilities who experience positive peer relationships are less likely to experience emotional and behavioral problems (Murray & Greenberg, 2006). However, lack of awareness may persist about these benefits of social participation. One participant stated she would address social participation more but that the "demands and time constraints warrant more focus on the fine motor skills, bilateral coordination, general gross motor, and sensory processing difficulties."

Another barrier may be that practitioners feel confined to traditional pull-out service delivery models that impede working with the peers of students with disabilities. Practitioners may need administrative support in incorporating best practices of working in the natural context and incorporating peers without disabilities into classroom-based interventions. As practitioners follow the least restrictive environment mandate (Individuals With Disabilities Education Improvement Act of 2004; Pub. L. 108–446), a push into the classroom will be seen enabling practitioners to more effectively address the social context through classroom wide strategies as part of RtI practices. Peers, who form a part of this social context, have reported feelings of fear, lack of preparation, and alienation in socializing with students with disabilities (Whitehurst & Howells, 2006). In the classroom, practitioners could implement programs that provide practical knowledge

regarding what it feels like to have a disability and what peers can do to increase interaction (Leigers & Myers, 2015).

In this study, practitioner experience also influenced the types of intervention strategy used. Inexperienced practitioners were less likely to adapt activities or the physical environment in preparation for group activities with peers. Occupational therapists have reported that groups promote social interactions between participants (Camden, Tétreault, & Swaine, 2012) and allow practitioners to evaluate abilities in a social setting, thus serving as a preferred method in addressing social participation; however, the therapists found that designing groups required substantial effort to implement (Camden et al., 2012).

Inexperienced participants were also less likely to advocate for changes in policy and procedures that would promote participation between students with and without disabilities. The facilitation of social participation, done in a manner that promotes equity and co-occupation, can be a mechanism for societal change. Through social participation, the social barriers of stigma and indignity experienced by people with disabilities can be broken down, furthering their engagement in chosen occupations (Law, 2002). However, only 13.5% of participants in this study indicated they were likely to work with school administrators. Collaborating with school administration is also often needed to facilitate participation in nonacademic events; participants reported low levels of involvement in organizing social groups (7.2%) and facilitating enrollment in clubs and sports for students with disabilities (3.6%).

Another concern is that practitioners may not be focusing on social participation during transitions. Transitions can be critical times for students with disabilities as they

enter new social and physical contexts, yet fewer than half (48.2%) of practitioners reported working on skills needed for early childhood transitions (e.g., sharing). This finding suggests a lack of practitioner involvement at a critical time in early school years (Myers, 2008). Alarmingly, only 4.6% of participants reported working with students with disabilities on skills needed for postschool transitions (e.g., interview skills). Despite positive beliefs regarding the role of occupational therapy in secondary transition planning, involvement by occupational therapy practitioners as students plan and prepare for adult roles is generally low (Mankey, 2011). When occupational therapists are involved, their focus tends to be on technology, task or environmental modifications, and individualized education and transition planning (Spencer, Emery, & Schneck, 2003). Michaels and Orentlicher (2004) found that ensuring that students develop valued roles and places in community life as well as personal relationships and friendships were important principles in the provision of person-centered transition services.

Participants also favored particular disability categories when looking at social participation. For example, research shows that students with sensory impairments demonstrate lower levels of participation, report social interactions that negatively affect self-concept, and have difficulty making friends (Engel-Yeger & Hamed-Daher, 2013; Punch & Hyde, 2005; Wolters, Knoors, Cillessen, & Verhoeven, 2014). However, participants who reported working with students who are deaf, hearing impaired, or deaf–blind or who have visual impairments or blindness were less likely to address these students' social participation needs than those of students in other disability categories. Participants were more likely to identify addressing the social participation needs of

students with developmental delay, intellectual disability, and multiple disabilities than the needs of students with other disability categories.

Research on common practices in working with students with autism, although not specifically addressed in this study, has shown similar findings. Ashburner, Rodger, Ziviani, and Jones (2014) found that most occupational therapists (82%) indicated that they very rarely or never assessed social participation of students with autism through a formal assessment tool but instead relied on informal methods (e.g., interview, observation). However, they found that 57% of therapists indicated that their main source of evidence was from presentations at workshops and conferences, and 52% identified social skills and relationship development as a frequent focus of identified goals. This finding may suggest that information and education play a part in clarifying roles and creating an understanding of how a specific disability influences social participation.

Limitations

The survey was developed specifically for this study and did not undergo procedures to establish psychometrics. Results of the open response items indicate that social workers should have been included in the list of professionals with whom practitioners may work. The target population, members of AOTA's Early Intervention and School Special Interest Section, may not be wholly representative of all occupational therapy practitioners working in school-based practice. Practitioners who are part of a national organization may be more likely to engage in training and education to advance their knowledge in particular areas of practice, may engage in different service delivery models, and may overall feel more competent in their abilities because of these experiences.

Furthermore, although the demographic portion of the survey attempted to account for differences in employment, education level, and years of practice, the survey was unable to distinguish differences in school-based practice that are influenced by policies and practices at the state and district levels. Finally, regarding disability-specific survey items, participants may have had difficulty separating out their involvement with students in certain disability categories from involvement with all students on their caseload.

Future Research

We suggest that a more fully tested instrument be created and used to measure how practitioners are meeting the social participation needs of students with disabilities and whether current education and training are sufficient in preparing practitioners to meet this need. Attempts to survey all practitioners through a nationally representative sample, not just those who are members of AOTA's Early Intervention and School Special Interest Section, would be beneficial. Furthermore, because practitioners reported using informal assessments more frequently than formal assessments, research is needed to determine whether current formal assessments are meeting practitioners' needs in evaluating students' social participation across all disability categories. The development of a tool assessing social participation may be needed. Finally, a look at practitioner characteristics and practice factors that are more likely to lead to advocacy and collaboration in meeting the social participation needs of students with disabilities would be beneficial.

Implications for Occupational Therapy Practice

Occupational therapy practitioners in school systems are in an ideal position to address social participation of students with disabilities. The occupational therapy scope of practice includes increasing awareness of occupational justice and supporting the full participation of all people, regardless of ability level, "in the full range of meaningful and enriching occupations afforded to others, including opportunities for social inclusion" (Townsend & Wilcock, as quoted in AOTA, 2014, p. S43). Steps need to be taken to strengthen occupational therapy's role and further support the engagement of students in their learning environments. Therefore, occupational therapy practitioners should

- Educate people on their team and in the school community about the valued role of occupational therapy in school-based mental health,

- Implement best practice in working with people within the social context of students with disabilities (e.g., teachers, support staff, peers) to facilitate their social participation,

- Collaborate with administrators in supporting schoolwide initiatives and programs that support students of all abilities and advocate for changes in policy and procedures, and

- Assess social participation needs and provide appropriate intervention as needed (e.g., during transitions, in and out of the classroom, by adapting physical and social contexts) regardless of the student's disability label.

Conclusion

  The strategies, practices, and perceptions of school-based occupational therapy practitioners regarding social participation for students with disabilities not categorized as an autism spectrum disorder demonstrate much variability. Occupational therapy practitioners in school-based practice should reflect on their level of involvement in addressing social participation. Many people in the school community may not understand the role of occupational therapy in addressing the social participation of students with disabilities; educating them about occupational therapy's scope of practice may be required. Practitioners may need to use a wider array of intervention strategies and service delivery models to best meet the needs of these students.

Table 1. Use of Intervention Strategies and Service Delivery Models

Strategy or Model	M	SD	n	% Reporting 1 or 2 (Less Likely)[a]	% Reporting 5 or 6 (More Likely)[a]
Develop interventions focusing on internal client factors	4.17	1.34	110	10.9	44.6
Address attitudes and behaviors of peers in social environment	3.22	1.45	111	33.3	20.7
Address attitudes and behaviors of adults in social environment	3.57	1.37	111	22.5	26.1
Organize social groups for students with and without disabilities	2.10	1.28	111	69.3	7.2
Facilitate enrollment in clubs and sports for students with disabilities	2.31	1.19	110	57.2	3.6
Work on social skills needed for early childhood transitions	4.17	1.43	110	12.8	48.2
Work on social skills needed for postschool transitions	1.96	1.28	109	71.5	4.6
Adapt classroom-based activities for increased interaction between students with and without disabilities	3.92	1.61	109	21.1	44.9
Adapt physical environment to facilitate greater social interaction among students with and without disabilities	3.72	1.55	110	22.7	35.4
Advocate for changes in policy and procedures that promote social participation among students with and without disabilities	2.75	1.60	111	54.9	20.7
Address social participation of students by working with					
The student with the disability	4.64	1.33	110	8.2	60.9
Peers in the student's general education classroom	3.10	1.44	111	36.9	16.2
Peers in the student's special education classroom	3.66	1.35	111	19.8	27.9
Special education instructors	4.25	1.35	111	9.0	47.7
General education instructors	3.91	1.53	111	17.1	42.3
School administrators	2.77	1.46	111	49.5	13.5
Paraprofessionals	4.23	1.43	111	12.6	48.6
Parents and caregivers	3.58	1.32	111	21.6	21.6
Guidance counselor	2.65	1.58	109	52.3	14.7
Speech–language pathologist	3.97	1.37	109	13.8	37.6
Physical therapist or physical therapy assistant	3.19	1.45	111	32.4	20.7
Adapted physical education instructor	2.61	1.50	109	52.3	11.9
Resource teachers (e.g., music, art, gym)	2.99	1.53	107	40.2	18.7
Support staff	2.35	1.48	111	60.0	11.7

Table 1 (Continued)

Strategy or Model	M	SD	n	% Reporting 1 or 2 (Less Likely)[a]	% Reporting 5 or 6 (More Likely)[a]
Address social participation of students with disabilities through					
Direct, pull-out model	3.63	1.40	112	20.5	32.1
Direct, classroom-integrated model	3.73	1.28	112	17.0	27.7
Group intervention	3.80	1.33	112	16.1	33.0
Services on behalf of students (IDEA)	3.79	1.55	110	20.9	34.6
Program supports	2.52	1.35	112	55.4	9.9
Response to Intervention (Tier I)	2.38	1.41	111	61.2	11.7
Response to Intervention (Tier II)	2.29	1.36	112	64.4	10.7
Response to Intervention (Tier III)	2.30	1.45	112	65.2	12.5
Cotreatment	2.84	1.40	112	43.7	12.5
Coteaching	2.88	1.57	110	45.6	18.8

Note. IDEA = Individuals With Disabilities Education Improvement Act of 2004; *M* = mean; *SD* = standard deviation.

[a]Response using Likert scale from 1 (*never*) to 6 (*always*).

Table 2. Perceived Level of Competence in Addressing Social Participation

Item	*M*	*SD*	*n*	% Reporting 1 or 2 (Disagree)[a]	% Reporting 5 or 6 (Agree)[a]
I understand my role in addressing social participation.	4.23	1.22	112	9.8	46.5
I have experience in addressing social participation.	3.96	1.34	112	13.4	34.0
I am competent in my ability to address social participation.	3.96	1.28	112	14.3	36.6
I would like a greater understanding of how to address social participation.	4.64	1.29	112	21.4	57.1
I have had training and education in addressing social participation of students with disabilities through					
College coursework (excluding fieldwork)	2.94	1.42	112	39.2	14.3
Level 1 fieldwork experiences	2.32	1.38	112	61.6	7.2
Level 2 fieldwork experiences	2.63	1.52	112	52.7	14.3
Professional courses	3.40	1.49	111	27.0	27.9
Mentorship	2.87	1.57	112	42.9	19.7
Independent reading of peer-reviewed sources	3.78	1.42	112	18.7	34.8
On-the-job training	4.02	1.66	110	21.8	48.2
Certification	1.91	1.38	110	73.6	7.3

Note. M = mean; *SD* = standard deviation.

[a]Response using Likert scale from 1 (*strongly disagree*) to 6 (*strongly agree*).

Table 3. Perceived Level of Involvement in Addressing Social Participation, by Student Disability Category

Disability Category	Formal Assessment[a]			Informal Assessment[a]			Intervention[a]			Discharge Planning and Recommendation[a]		
	M	SD	n	M	SD	n	M	SD	n	M	SD	n
Deaf–blindness	1.42	0.98	77	3.11	1.89	72	2.73	1.57	66	2.08	1.23	65
Deafness	1.36	0.90	73	3.04	1.92	70	2.55	1.45	64	1.97	1.14	66
Developmental delay	2.50	1.82	111	4.47	1.57	111	4.17	1.31	109	2.99	1.65	106
Emotional disturbance	2.21	1.61	105	4.18	1.63	104	3.87	1.45	102	2.88	1.57	100
Hearing impairment	1.64	1.25	90	3.40	1.78	90	3.14	1.45	84	2.27	1.38	84
Intellectual disability	2.35	1.63	110	4.25	1.50	110	3.87	1.35	108	2.85	1.55	105
Multiple disabilities	2.22	1.59	108	4.23	1.53	109	3.85	1.38	108	2.74	1.45	105
Orthopedic impairment	2.04	1.48	106	3.86	1.71	105	3.47	1.55	104	2.54	1.43	100
Other health impairment	2.14	1.58	105	4.14	1.58	107	3.69	1.42	105	2.67	1.45	101
Specific learning disability	2.20	1.59	106	4.15	1.55	108	3.79	1.39	107	2.73	1.44	104
Speech–language impairment	2.02	1.56	101	3.86	1.73	103	3.71	1.41	102	2.57	1.49	99
Traumatic brain injury	2.04	1.56	99	3.89	1.81	94	3.47	1.68	95	2.53	1.49	94
Visual impairment or blindness	1.94	1.45	95	3.67	1.82	94	3.21	1.61	90	2.40	1.44	89

Note. M = mean; SD = standard deviation.

[a]Response using Likert scale from 1 (*never*) to 6 (*always*)

Chapter 4: "I Never Truly Thought About Them Having Friends":

Equipping Schools to Foster Peer Relationships[3]

Abstract

Students with severe disabilities often experience limited social participation and few friendships at school. We describe a project to equip school teams to implement peer support arrangements and peer networks focused on friendships, inclusion, and learning. We adopted a phenomenological qualitative approach to learn how participants viewed these interventions within their schools, issues emerging during implementation, and the impact of these interventions. We discuss themes surrounding (a) the impact of the context and structure of the school on implementation, (b) participants' views on professional development related to these interventions, and (c) impact on students, peers, and the broader school community.

Introduction

Efforts to foster relationships among students with and without severe disabilities have been a long-standing focus of both research and practice (Brown et al., 1979; Carter, Bottema-Beutel, & Brock, 2014). Although many peers without disabilities express interest in developing friendships with their schoolmates with intellectual disability, autism, and other developmental disabilities (Copeland et al., 2004; Han & Chadsey, 2004), myriad barriers may limit the extent to which such relationships ultimately develop. For example, segregated service delivery models may limit the opportunities students have to encounter one another during the school day, peers may lack the

---

information or guidance needed to feel comfortable initiating new relationships, the close proximity of paraprofessionals and other adults may hinder interactions, and the social-related deficits of students may affect the quality of those interactions (e.g., Shokoohi-Yekta & Hendrickson, 2010). As a result, students with severe disabilities often experience high levels of rejection and social isolation (e.g., Kemp & Carter, 2002; Symes & Humphrey, 2010). Moreover, the involvement of students with severe disabilities in shared activities with their peers remains strikingly limited in classrooms, extracurricular clubs, and other school activities (Kleinert, Miracle, & Sheppard-Jones, 2007a, 2007b; Simeonsson, Carlson, Huntington, McMillen, & Brent, 2001; Wagner et al., 2004). As Kleinert et al. (2007b) found, in a statewide survey of teachers of students with severe disabilities in one largely rural state, key barriers to participation in extracurricular activities included lack of a) transportation, b) parental resources or support for extracurricular involvement, and c) options in the school or community.

Two intervention approaches have been found to be particularly effective at increasing interactions and relationships among students with and without severe disabilities—*peer support arrangements* and *peer network interventions*. Peer support arrangements involve two to three peers without disabilities who provide academic and social support to a student with a severe disability in a general education classroom (Carter, Cushing, & Kennedy, 2009). Peers attend an initial training session in which they learn to help their classmate academically (e.g., organizing needed materials, staying on task, summarizing or rephrasing key concepts, prompting the student to respond to questions asked by teacher), socially (e.g., ensuring the student has an active role in group projects, making introductions to classmates, initiating conversations), or

69

behaviorally (e.g., encouraging the student to use picture schedule, redirecting the student when he or she is off-task). This peer-delivered support is provided under the guidance of a paraprofessional or special educator, who gradually fades close proximity by shifting away from a one-to-one support role. Research indicates students with severe disabilities benefit by having more interactions, increased academic engagement, increased skill acquisition, expanded social networks, and new friendships (e.g., Brock & Carter, 2015; Carter et al., 2015; Carter, Cushing, Clark, & Kennedy, 2005; Carter, Moss, Hoffman, Chung, & Sisco, 2011). Likewise, peers may benefit in a number of ways from their involvement, including enhanced academic performance, improved attitudes regarding disability, unanticipated personal growth, and lasting friendships (Carter & Kennedy, 2006; Copeland et al., 2004; Cushing & Kennedy, 1997).

Peer network interventions involve a larger group of peers—typically three to six—who develop a social circle around a student with a severe disability (Carter et al., 2013). In contrast to peer support arrangements, peer networks take place outside the classroom and are focused primarily on building connections with a broader range of peers, social skill development, and new friendships. Each network meeting incorporates an enjoyable shared activity (e.g., eating lunch, volunteering, playing a board game), conversation about a selected topic (e.g., a recent movie, a favorite sports team), reflection on how the group might grow, discussion of activities the group might do together (e.g., dances, sports, movies, eating out, video gaming, celebrating birthdays, picnics), and arranging of times when students might spend together outside of the weekly meetings. Each network begins with an initial orientation meeting, lasts throughout the semester, and is facilitated by a member of the school staff (e.g., special

70

educator, general educator, coach, club leader, paraprofessional). Research support for this intervention approach is also strong and includes increased social interactions, new skill acquisition, larger social networks, and more durable friendships (e.g., Gardner et al., 2014; Hochman, Carter, Bottema-Beutel, Harvey, & Gustafson, 2015).

Although both peer support arrangements and peer network interventions are considered evidence-based approaches for improving social and learning outcomes of students with severe disabilities, little attention has focused on avenues for equipping school teams to implement these interventions independently in their own schools (Brock & Carter, 2015). An enduring lament in special education is the limited extent to which research-based practices penetrate the everyday activities of typical schools (Carnine, 1997). What might it take to equip educators to carry out these interventions to promote the social participation of students in their schools?

The Kentucky Peer Support Network Project (2013-2016) was launched to equip schools throughout the state to address the social inclusion of students with severe disabilities by fostering friendships and facilitating shared learning; the project has provided in-depth regional trainings and periodic technical assistance to teams from more than 80 Kentucky schools in the areas of establishing peer support arrangements and peer network interventions. Although the efficacy and social validity of these interventions are well documented, no studies have focused on how to promote their use in widespread ways using typical professional development pathways. The purpose of this study was to examine the views of a subset of team members who participated in these trainings and implemented these interventions in their schools without intensive researcher support. Such information could provide useful guidance on the design and delivery of statewide

71

technical assistance initiatives, as well as provide insights into the social validity and impact of peer-mediated interventions. Little is known about how interventions found effective in the literature might be implemented and carried out utilizing resources ordinarily found within the context of a school, including its rurality. We asked the following research questions:

Research Question 1: How did participants perceive the quality and impact of the professional development they received?

Research Question 2: In what ways did participants implement what they learned about peer-mediated interventions in their schools?

Research Question 3: How did they view the impact of this work on students and their school?

Method

We adopted a qualitative research design that used phenomenological principles (Creswell, 2013) to investigate the "lived experience" of participants who attended the Kentucky Peer Support Network Project's full-day regional and pilot site trainings, as well as implemented the interventions they learned in their own schools. We obtained rich descriptions of participants' experiences and perceptions through extended interviews. We obtained approval for the study from the University of Kentucky's Office of Research Integrity (IRB number 15-0089-PIH).

Training and Implementation

The project held training for the participating schools in two stages. First, the project held regional trainings for all interested schools, in collaboration with the state's regional special education cooperatives. Schools were invited to send a team consisting

of a special and general education teacher, school administrator, parent, and other team members (e.g., paraprofessional, related service professional, school psychologist), as possible. The full-day training was designed to (a) equip schools with a greater understanding of how peers can help facilitate engagement, motivation, academic success, and genuine friendship for students with severe disabilities; (b) assess each school's present efforts in creating meaningful opportunities for friendships among students with and without severe disabilities; (c) identify core building blocks for creating those opportunities; (d) introduce peer networks and peer support arrangements; and (e) outline how to implement and evaluate each of these intervention approaches in their own schools. At the end of each regional training, schools were invited to apply for pilot school status. Pilot schools committed to (a) attending a second day of training focused more directly on their own school context, (b) actually implementing these interventions in their schools, and (c) collecting process and outcome data on the development of peer support arrangements and peer networks.

The second training was only for schools selected as pilot sites, and provided (a) a more in-depth description of the implementation steps associated with peer support arrangements and peer networks, (b) structured times to plan for implementation in their own schools, and (c) the creation of a formal action plan for their school (Human Development Institute, 2015). A primary focus was on how these strategies could be adapted in ways that worked for their individual schools. Individualization was based on the present level of inclusive efforts and peer involvement within each school, the number of students expected to be involved at their school, and the degree to which their school administration was seen to be invested in this work.

The project held the regional trainings in the spring and summer before the start of the academic year. The pilot site training for four of the five schools was held at the start of the school year, and, for the fifth school (High School A), it was held 2 months into the start of the school year. Ongoing technical assistance (on-site visits by project personnel) started the second semester of the school (January) and continued throughout the remainder of the school year. As we describe below, representatives from four of those five schools chose to participate in this study (see Table 1). High School A reported implementing peer networks for one student and peer support arrangements for six students (n = seven total students) by the end of the school year; High School B reported implementing 12 peer networks and peer support arrangements for 11 students (n = 12 total students, most students received both). Middle School A reported implementing peer support arrangements for four students, but no peer networks (n = four total students). Middle School B reported implementing 14 peer networks and 14 peer support arrangements (n = 14 total students). We conducted interviews with team members from these four schools at the end of the school year.

Participants

At the time of this study, these five schools had participated in the regional orientation trainings and the full-day pilot site training, as well as received monthly onsite technical assistance visits from project staff starting in mid-year. We requested and received letters of consent for participation from principals at all five schools. We used a purposive sampling strategy to identify participants who could speak deeply and directly to this topic (Todres, 2005). In phenomenological research, sampling size is adequate when the sample is diverse and informational redundancy is achieved (Lincoln & Guba,

1985). Through the project site coordinator at each of the five schools, individuals who attended both the regional orientation and the pilot site training were sent a recruitment flyer. Individuals interested in participating in the study were invited to contact the first author for more information about the study.

Seven individuals agreed to participate in this study. They represented four of the schools contacted, including two middle schools and two high schools. Participants included one parent, one guidance counselor, two special education teachers, one special education director, one speech-language pathologist, and one school psychologist; participants' unique roles provided a diverse professional outlook on the training and implementation of the peer support network project. All participants were female. Schools were located in central Kentucky in rural areas (see Table 1 for school demographics). For sampling, emphasis was placed on (a) inclusion of individuals who had participated in full-day pilot site trainings, and (b) inclusion of a diverse representation of roles who serve youth with disabilities enrolled in the school setting.

Data Collection

Using a semi-structured interview technique, the first author interviewed each of the seven participants in person. Interviews allowed her to capture the "depth of emotion, the way they have organized their world, their thoughts about what is happening, their experiences, and their basic perceptions" (Patton, 2002, p. 21). The first author developed an interview guide in collaboration with the second author and used the study's objective to inform the process with the intent to elicit participants' views and perceptions. The final interview guide included 28 open-ended questions (available by request) used to support detailed and distinctive responses, allowing participants to provide a full

description of their experiences and perceptions. The interview asked permission to contact participants for future follow up and member checking. A semistandardized format was used in which a degree of freedom and adaptability allowed the interviewer to probe and seek clarification in selected areas.

Interviews lasted between 45 and 75 min and took place at the school in which the participant was associated. All interviews took place within the last 3 weeks of the academic year to allow each school time to implement as much of the training as possible during the pilot year. All participants provided informed consent for the study and confidentiality was assured. All interviews happened individually with the exception of participants from Middle School "A", who requested to be interviewed together due to conflicts in the participants' schedules. The interviewer kept field notes to record any pertinent nonverbal language, audio recorded the interviews, and transcribed them verbatim (146 pages). All names reflect pseudonyms. Each transcription was checked for accuracy.

Data Analysis

We conducted a thematic analysis of the data to uncover themes and used a data-driven inductive approach without testing prior assumptions (Patton, 2002). We used a systematic process in which open, axial, and selective coding helped identify emerging themes. The first author, having established familiarity with the data through conducting, transcribing, and thoroughly reviewing all interviews multiple times, identified initial codes utilizing HyperRESEARCH qualitative analysis software (version 3.7.2). When necessary, multiple codes were assigned to single passages to denote multiple implications. The first author developed a codebook with definitions to ensure

consistency with coding.

We found 79 unique codes across seven participants. With each interview, we found fewer unique codes; the final interview produced zero unique codes, supporting the criterion of informational redundancy (Lincoln & Guba, 1985). HyperRESEARCH provided a frequency count for each code. High frequency codes included benefits ($n = 47$), commitment ($n = 35$), sense of belonging ($n = 32$), and benefit of peer support network ($n = 30$). The coding stage included revising and refining the codes to core categories, and identifying how these connected to best represent the data. We grouped similar codes into one or more categories to organize findings into meaningful patterns. The first author then checked categories against coded extracts, and matched similar categories into themes. Themes were conceptualized against the original data, and were supported by participant quotes.

Quality Assurance

We used several means of establishing quality against the criteria established by Lincoln and Guba (1985). The first author attended the same training as the participants to become oriented to the material and the format in which it was being presented. Data from the interviews indicated that rapport and trust had been established, which allowed the participants to speak their mind. Second, we used member checking, in which aggregate summaries of themes and interpretations of the data were provided to participants for comments. Third, we created a thick description in which sufficient detail is provided to evaluate the extent to which conclusions can be drawn. The depth of reporting, however, had to be balanced with the ethical requirement for protecting participant anonymity. Fourth, we obtained diverse viewpoints from participants of

varying professions, as well as those who worked with different age groups (middle school and high school). This resulted in triangulation to ensure that multiple perspectives were considered.

Results

Qualitative analysis of the data resulted in the emergence of three themes. These were (a) the impact of the context and structure of the school on intervention implementation, (b) perceptions of the professional development they received, and (c) benefits of implementation.

Context and Structure of the School

Participants reported how various factors inherent in the context and structure of the school affected implementation of the interventions in their schools. Specifically, participants reflected on (a) how concepts of peer support arrangements and peer networks were built into pre-existing structures; (b) the perceptions, attitudes, and behaviors needed for successful implementation; (c) purposeful scheduling; and (d) elements of recruitment and training.

Pre-existing structures. Current factors within the school environment affected the implementation of peer support arrangements and/or peer networks. Participants explained how they used components already in place such as peer tutoring programs, peer buddies, social skills classes, and response to intervention services. The strategies they learned through the project, however, provided them with a structure that was lacking in existing programs. In particular, peer networks filled gaps that occurred during less structured times in the school day, and also provided students with "more memories [and] more social connections" (Rachel). Participants also found it helpful to build upon

activities and events that were already planned for the school body as a whole, but in which students with severe disabilities frequently failed to participate.

Differences were also apparent across middle and high school levels. Macey noted that high school students often had transportation, whereas middle school students did not: "A lot of kids don't have transportation from their house to somewhere else. They barely have transportation to school." Rachel also addressed the issue of transportation for middle school students, recounting the success of an inclusionary Zumba class held after school. She stated, "I'm certified to drive the district van, that's how we made it happen. I could drive them home."

Perceptions, attitudes, and behaviors of individuals. Participants reported that the context in which peer support arrangements and peer networks are implemented must include a team dedicated to the vision of this work, with good communication and a positive perspective.

In educational settings where inclusive practices were not as available, participants reported greater resistance. Bailey stated, "I would love for [other teachers/staff] to take a more active part in getting my students involved in some after school programs" but she felt her students were "not a priority for the other teachers." Overcoming resistance to change was noted in students with disabilities as well. In the school where students were primarily self-contained, students with severe disabilities were reported to have a harder time adjusting to the shift of more inclusionary practices. Bailey stated, "We tried to make them like sit at different tables [in the lunchroom], and they just wanted to sit with us, because it was what they were used to."

Participants described diverse responsibilities as reflective of their own roles on

79

the team. Carey, as a parent, defined her role as "knowing what is going on at the school" and doing whatever she could to facilitate what needed to be accomplished. Carey indicated a desire to take on more of a role but she did not know how. Sally described the roles of the guidance counselor as "scheduling," "student support," and serving as a contact for parents with questions. In regards to the interventions, Rachel perceived the role of the psychologist to make "sure that [students with disabilities] social and emotional health is supported, and that their behavior is not getting in the way of what they need to be doing." The two special education teachers and the special education director saw their roles as focused on lesson modifications, accommodations, serving as case manager, and facilitating support services. Brenda, the speech-language pathologist, felt her primary responsibility was to make sure students could communicate their wants and needs. Other individuals mentioned as being a part of the team and serving in various roles included students, administrators, paraprofessionals, coordinators, and occupational therapists.

Participants mentioned communication as an element critical to success. Carey felt uncertain about the outcomes of the project because, as she states, "I don't know because I don't know what's going on in the classroom. I don't know how they are interacting with him in the classroom…" Mary felt that communication with parents was at times difficult and linked this barrier with level of comfort and perceptions of safety, especially in out-of-school events.

Purposeful scheduling. "Purposeful scheduling" (Sally) was a recurring theme among all of the participants. Sally describes taking each student, one by one, and setting up schedules based on their IEP and their personal needs. She stated, "The biggest change

is probably the purposeful scheduling of saying this person is buddies with this regular education student and they do well together and they have a good relationship, so let's pair them up in a class."

Considering scheduling aspects was also important in deciding how to best support shared activities within peer networks. Three participants (Mary, Rachel, Bailey) detailed how peer networks met and implemented activities during school hours, either as a block that met a certain number of times, or as a class in which students received credit. Mary described this necessity: "I can't imagine having been able to do [peer networks] without the in-school time because kids aren't here. And with our population, they can't get here. So it would have been impossible to do without the in-school time." Facilitating engagement during the summer months was also noted as a concern: "If we don't facilitate it, there's just not going to be a lot of connections over the summer" (Rachel).

Peer recruitment and training. Participants described multiple reasons as to why peers chose to be a part of the interventions, including becoming connected to a larger group within the school, because they were nominated by their teachers (received recognition), because they gained pleasure from participating, or to learn career readiness skills. Mary described the ease by which peers signed up; a database was created by which, Mary stated, "if we had a student who needed more support in a class, we would just look up to see if there was anyone there willing to do that." None of the participants reported recruitment to be a barrier. Indeed, some participants had to cut recruitment off because of the large number of peers who wanted to be involved.

Trainings were identified as an important aspect of setting up an appropriate context and structure for peer support arrangements and peer networks. Participants

provided varying levels of information to students with disabilities and the peers participating in the project. Four participants (Brenda, Macey, Sally, Bailey) talked specifically about the need for discussing confidentiality. Rachel and Mary described more extensive training sessions. Rachel's school provided potential peers with opportunities to engage in certain activities with students with severe disabilities prior to committing, and also described to them the principles of the program. Mary's school utilized the article "Friendship Matters" (Carter, Swedeen, & Kurkowski, 2008), provided factual information (e.g., statistics for depression in individuals with disabilities), discussed principles of inclusion, and had explicitly open communication between students and organizers regarding what activities were working well and what wasn't working. Through the process, Mary stated, "everyone knew what was expected."

Carey felt the training needed to include more practical information on how to instruct students with disabilities. Carey was pleased that her son had taken a role as a basketball manager as a result of the project. She felt, however, that he did not fully understand what he was supposed to do in that role and that no one was there to make sure he did what needed to be done. She felt the use of peers who were already there could fill this role but did not know how to provide the training herself. Carey felt that the peer partner in her son's classroom who had a "tough love kind of thing with him" was especially beneficial for her son.

Perceptions and Feedback of the Peer Support/Network Training

All participants felt that the trainings provided through the Kentucky Peer Support Network Project were positive and "amazing" (Carey). Through the project, participants indicated they were able to (a) gain an awareness of the issues, (b) develop relationships

for collaboration purposes, and (c) develop goals specific to the needs at their school. Participants also provided feedback in identifying ways in which they felt the program could be adjusted in the future based on their own perceptions and feedback they received from others.

Increased Awareness. "I always want [students with severe disabilities] to be included into the regular ed classroom as much as they can, but I never thought about those kids developing friendships," Brenda stated. She continued,

> I teach social skills. I teach them how to make friends. I teach them how to have conversations. But I never truly thought about them having friends…I never really thought about it that way until going through the training.

Sally shared similar sentiment in that she gained "insight into the fact that even though our students with special needs are in the class with other students, they're not always taking part in things like the other students are." Rachel stated, "We went into the training knowing that our kids needed to be included more, needed to develop more friendships, but it was a vague idea." Through the trainings, Rachel's team identified focus areas to target.

Opportunities for collaboration. Trainings provided opportunities for participants to ask questions regarding aspects such as training of peers, how to structure networks, and adjusting paraprofessional roles, as well as a means for engaging with professionals from other schools. Carey discussed the wonderful ideas that emerged from the "input of other teachers" and Sally found it important to "network with other places that are doing the same thing." She said that it was beneficial to know what was going on in other schools and in other places even when those ideas did not necessarily fit into their structure.

Developing Goals. Training sessions provided participants with a process to identify areas of need and develop goals. Goals often included identifying locations in which students with disabilities needed more support to connect with peers in forming relationships. These areas included assemblies (Bailey, Rachel), between classes (Sally, Rachel), sports programs (Bailey, Brenda), lunch (Macey, Bailey, Sally), clubs (Bailey, Brenda), general education classrooms (Bailey), fieldtrips (Bailey, Sally), and after-school activities (Mary, Sally). Other goals were more visionary: "help connect both [students with disabilities and peers] to school [so that they would become] more confident in who they are" (Sally), and to have students "feel like they have value" (Rachel). Participants felt that, ideally, strategies to meet these goals should be "seamless" and "happen more naturally" (Sally), in which students would be able to receive needed modifications and accommodations without it being obvious. Participants felt students were able to find common connection and shared interests, which resulted in a greater sense of belonging.

Feedback on training and support. Participants all anticipated they would continue the interventions once their participation as a pilot site school was complete. Macey stated, "The [program]… it will continue. It will keep going and evolving and getting better and better." Personally, Mary believed that, "It's one of the most powerful things that I've participated in as a professional." Rachel has planned on expanding its principles by taking what they have learned "to the entire school" and several participants identified their desire to grow their peer support arrangements and peer networks beyond that which had been established during their first year. Specifically, participants identified the need to focus efforts on summer, after-school events, and non-academic time (e.g., lunch).

84

Participants found the training beneficial because it provided a structure through which to collect data. Mary stated, "We would have not only the human justification of people need to have friends, but also the data piece that the administrators often want to see." Needing to be able to justify and explain the program to others who had not attended the training was a thread that emerged among participants.

Benefits of Implementation

Participants were excited to share the benefits of the project and were pleased that students benefited from not only the program but the community as well. They described benefits in the areas of friendships, inclusion, and learning for students with and without disabilities.

Friendships. All participants described the development of friendships as one of the most important benefits of peer support arrangements and peer networks. They described friendships as occurring more frequently, being more genuine, and affecting the behaviors of the students. Friendships tended to develop around shared interests (e.g., basketball), or a shared personal feature (e.g., gender). Sally indicated the project allowed "students to have some opportunities socially that they wouldn't have otherwise." Macey provided an account of how a peer engaged with a student with a disability when the peer learned that his dream was to be on the basketball team. She spent time with the student going through a basketball manual so that he would learn the skills and the rules:

> [She] worked with him and he made the basketball team, and he made those friends on the team, which really just changed him as a person. He just became a different kid. We all talked about how he's almost like a little leader now in school. (Macey)

Participants indicated these relationships might have initially felt contrived as they were "set up and designed" (Sally), but "became more natural" (Sally) as

85

experiences between students formed and the relationship grew. Although some participants shared stories of students with disabilities building friendships with experiences outside of school (e.g., Mary reported one student going to Disney World with his friends), most accounts acknowledge the subtleties associated with a newly formed relationship. Carey felt that, in regards to her son, "the boys on the basketball team have done the most…just because they'll thank him, or fist bump him, or high five him, or just acknowledge that he's there."

Inclusion. Participants from schools in which inclusion in the classroom was not commonly practiced identified an increase in student placement in general education classrooms occurring as a result of implementing peer support arrangements. *How* students were included in the classroom also changed. Brenda described how their biggest success was that students could be in a general education classroom without any other support needed other than guidance from their friends and classmates. More commonly, however, participants saw an increase in inclusion as it related to a student's acceptance, sense of belonging, and connection to the school, rather than just physical presence in a certain location.

Inclusion was seen as an extension of the friendships that were developed. As students developed friendships, they were often included in other aspects of school life. Bailey reported that every student in her class "now has someone in the school who knows their name, who says 'hi' to them in the hallway, who calls them by their name…" Sally shared how students are more "confident in terms of thinking 'I belong here! This is my place too!'" And Carey told how her son looked at her "with a grin on his face like he was so happy" because he was "hanging out with the guys; he was one of the guys!"

In addition to the school itself, several participants reported how the community was more inclusive to students with disabilities and their peers. For example, students with severe disabilities were included in school service learning projects.

> We had a group of kids through the peer support/network, they paired up with their student council and helped pack the boxes [food and household supplies] and distribute those to the seniors. So that was nice too - for them to be able to be involved in helping somebody else. (Sally)

Four participants discussed how students with disabilities went into the community with a valued role and purpose in giving to the community. Macey recounted a basketball game in which a rival school noticed how a student with a disability was being included, with his peers facilitating opportunities for the student to score. "A parent from the other school called our school and said never had she ever seen anything that moved her more than that. And that's just what it is – it's just a matter of people loving kids" (Macey).

Learning. As increases in friendships led to increases in social inclusion, inclusion likewise led to additional learning opportunities for students with severe disabilities. Sally noted that students "appear to enjoy coming to school more…that translates into a greater interest in learning…" Carey felt that the presence of peers facilitated her son's progress towards his IEP goals: "And he picked up a lot of speech; I could tell last semester…he came home and he wanted to communicate more." Participants also felt that students with disabilities were more motivated to complete academic tasks that they otherwise would not do. Bailey reported how students responded well to peers, with negative behaviors decreasing. She stated the peer "can say, 'Why don't you do this?' and they do it for her when sometimes they tend to argue with me. You don't argue with your friend…"

In addition, all participants reported that peer support arrangements and peer networks addressed students with disabilities learning to appropriately engage socially. Peers, furthermore, provided students with disabilities a support system in which they receive valued feedback. Students with disabilities were exposed to natural consequences from their peers when they engaged in socially inappropriate actions. Mary described some of the "the negatives" such as "excessive texting" between students with and without disabilities as "teachable moments."

Benefits for peers. Positive benefits were noted not only for students with disabilities but also for peers participating in the interventions. Through the peer support arrangements and peer networks, peers formed a sense of identity and gained "social status" (Rachel). Being part of these interventions provided peers a mechanism to become connected to the school and to others. Rachel recounts how there were "a number of kids [without disabilities] who weren't part of anything that we have done this year that wanted to be a part of it." As students with disabilities formed friendships, peers reciprocated. Mary reported that "the kids have gotten, both kids have gotten out of it just a deeper more genuine respect for people." Two participants stated that students who were identified as peers were chosen specifically because it was felt that the program would help them as well. Sally stated, "To be honest some of those students were placed in the class (program) more so probably thinking…that they were a peer, but really also for their own benefit," and noted that "we've seen positive changes not just for our special education students, but for our regular education students that we needed to get more connected."

Another benefit is that peers learned how to engage socially with students with severe disabilities. Macey described a situation in which she had to step in to train a peer how to handle inappropriate social behaviors of a student. Macey was able to show the peer how to use assertive communication and to establish boundaries. Furthermore, peers may be exploring vocational roles in which they desire to work with diverse populations. Macey referenced one student who could not decide between being a part of the peer support/network or doing service learning at the hospital to prepare for medical school. Macey advised that

> medical school will teach you all the science, all the biology, all the chemistry, all the procedures that you need to know to be a good doctor but what medical school doesn't teach you is empathy, and tolerance, and patience, and how to breathe sometimes, and that is what…will only enhance your ability to be a great doctor someday.

Macey was able to meet this student's parent at graduation. In her conversation with them, Macey recalls, "The parents said…our daughter is very bright. She will be a doctor someday, but nothing has changed her as an individual more than your [peer support/network] class."

Discussion

Although peer support arrangements and peer networks have been widely discussed in the literature, this is the first qualitative study to examine the experiences of school staff who implemented these interventions with minimal external support under ordinary school conditions. The Kentucky Peer Support Network Project, in collaboration with the schools, considered how the project could be implemented and sustained within the supports existing naturally within the school context. Through the words of the participants, peer support arrangements and peer networks were seen to provide positive

benefits for students with and without disabilities. Participants affirmed that the project provided a framework for intervention that guided interactions between students with disabilities and their peers during structured activities, as well as emphasized engaging and connecting students during non-structured times, in extracurricular activities, and at out-of-school events. Research has found that increased involvement in unstructured activities, as opposed to structured activities, is associated with higher levels of social competence in children (Brooks, Floyd, Robins, & Chan, 2015). We highlight four key findings from this project.

First, the project facilitated a context for real change in participating schools. By implementing the interventions within the existing context and structure of the school, participants reported changes that they considered sustainable. Schools reported greater success when the team was dedicated to the overall vision of increasing friendships and learning opportunities for students with and without disabilities, and when there was clear communication. A goal described by participants was to create a social context within the school environment in which a "seamless," natural experience was achieved and where differences between students with and without severe disabilities were minimized. Natural environments are ideal in teaching social skills to students with disabilities, and developing these competencies occur best when students with disabilities have the opportunity to engage with peers who model appropriate behavior (Fenty, Miller, & Lampi, 2008).

Second, peers were quite willing to be a part of peer support arrangements and peer networks, and they valued and learned from their friendships with students with severe disabilities. Peers who are not typically engaged with students with disabilities

may be unsure how to include them in ongoing activities (Lindsay, McPherson, Aslam, McKeever, & Wright, 2013; Whitehurst & Howells, 2006). Training peers on how to do just this was an important step in implementing the peer support arrangements and peer networks. Lindsay and McPherson (2012) found that disability awareness efforts improved social inclusion. This project provided a framework through which peers could be trained and then engaged in structured activities with students with severe disabilities. Lack of training has previously been identified as a barrier for successful peer support implementation (Carter et al., 2009; Copeland et al., 2004). Participants described training students on actionable steps they could take under different scenarios. With time and exposure, peers naturally formed connections and behave with more genuine intent as friendships developed to a deeper level.

Third, students with severe disabilities benefitted from friendships developed with peers without disabilities. Participating team members described students with disabilities responding more to instructions provided by peers than those given by an educator. Research supports the use of peers to facilitate learning in students with moderate to severe disabilities, with additional benefits seen in reducing the need for direct, hands-on support provided by a paraprofessional (Carter, Sisco, Macid, Melekoglu, & Kurkowski, 2007; Carter et al., 2011; Carter et al., 2015). These friendships may also provide a more dependable social support system for students with disabilities. The social environment is one of the leading factors likely to influence participation (Kramer, Olsen, Mermelstein, Balcells, & Liljenquist, 2012; Little, Sideris, Ausderau, & Baranek, 2014). Participants reported that student with disabilities were more readily acknowledged in the school context, and participated more often in valued roles following the development of

friendships with students without disabilities. This is especially important as adolescents enter a period in which emotional and instrumental support transfers from that of parents to peers (Del Valle, Bravo, & Lopez, 2010). Students with disabilities are likely to benefit from a peer structure that will provide them with the support they will need during this time, as well as through transitions to employment and postsecondary programs.

Fourth, the project promoted awareness—to participating students, to the broader school, and to the greater community—that inclusion is about much more than physical presence in a general education classroom. Through the development of friendships centered on common activities and interests, students with disabilities were part of the social interactions occurring in hallways, in the cafeteria, during dances, and in the classroom. Peer networks provided students with disabilities a web of support and a sense of belonging. Through a combination of both physical and social inclusion, participants saw that students with severe disabilities were able to engage in classroom learning with fewer supports, resulting in a less restrictive environment.

Implications for Practice

Although we found that the implementation of these peer-mediated interventions was influenced by both school context and structure, and the generalizability of the results is limited to the schools studied, there are several implications for practice. First, peer support arrangements and peer networks may be most successful when a team approach is used and is marked by effective communication strategies. Educating others within the school context may be required to achieve a committed, unified approach. Pilot school teams had attended the project trainings, but these teams represented only a small part of the staff of each school. Second, these interventions can be beneficial to

students with severe disabilities in terms of friendship development, inclusionary practice, and learning. Such practices can also serve to facilitate a sense of belonging and school connectedness in students with and without disabilities. Third, pervasive barriers (e.g., scheduling a regular time for peer networks, training other faculty and support staff in the school, the need for ongoing communication with families) will need to be addressed. The team needs to have a well-defined vision as to what needs to be achieved, as well as a well-articulated plan, with measurable steps, to accomplish it.

Study Limitations and Recommendations for Future Research

A primary limitation of this study lies within the reliability of the coding and analysis. The first author conducted primary coding and analysis. Impact of this limitation was minimized by providing thick, rich description utilizing verbatim quotations from participants to support the themes, and member checking to ensure that findings were consistent with what they reported. A second limitation is that the study does not authenticate if the peer supports and networks implemented by the participants were, in fact, true representations of the practices presented in the trainings. In other words, we did not incorporate direct measures of implementation fidelity of peer support arrangements and peer networks. Participants could have, and some reported doing so, altered the way in which they put into practice the principles and key components of the interventions they learned about at the trainings.

Future research could look at the consistency between implementation of the program and the training provided. Although the project provided on-site technical assistance to each of the participating schools in the second half of the school year, for most schools to implement these strategies with a high level of fidelity, technical

93

assistance should start as soon as possible after implementation training. A third limitation was that the level or extent or implementation of each of these strategies across our four participating schools was not even. While one high school and one middle school both reported using peer networks extensively, one of our participating high schools had only implemented one peer network at the time of the interviews, and one middle school (while implementing peer supports) had yet to establish a peer network. A fourth limitation was that interviews were conducted with only seven participants across four schools. Additional research needs to consider a broader set of schools, school roles (e.g., administrators, paraprofessionals), and multiple individuals within each role. In addition, longitudinal research that examines the development of the program over several years would be beneficial. Finally, research also should look to gaining the in-depth perspective of students with disabilities and peers regarding their involvement in the program.

Conclusion

Peer networks and peer support arrangements have been validated as evidence-based practices for increasing student interaction, friendships, and academic and social engagement for students with significant disabilities with their peers without disabilities. This exploratory, qualitative study confirmed the value of these approaches through the experiences of participating team members, while highlighting key challenges that schools in rural communities have in adapting evidence-based practices into their unique contexts and cultures. As such, this is one of the very first studies to explore the perspectives of school teams who implemented these strategies under typical school conditions. We found that participating schools' intentional focus on implementing these

94

strategies facilitated a context for real change in those schools, that peers without disabilities valued and learned from their friendships with students with disabilities, that students with significant disabilities themselves benefitted from these friendships, and that the participants involved gained a deeper appreciation that inclusion is more than physical presence in a general education classroom.

Table 1. Participant Characteristics

Name	Job Title	Date of Training	School Demographics
Carey	Parent	Regional: 8/20/2014	High School A Students identified as minority: 11%
Bailey	Special Education Teacher	Pilot: 10/17/14	Students eligible for free/reduced-price meals: 36% Student/teacher ratio: 18.4:1
Mary	Special Education Director	Regional: 5/5/2014 Pilot: 8/28/14	High School B Students identified as minority: 35% Students eligible for free/reduced-price meals: 60% Student/teacher ratio: 16.4:1
Macey	Special Education Teacher	Regional: 5/5/2014 Pilot: 8/28/14	Middle School A Students identified as minority: 35% Students eligible for free/reduced-price meals: 66%
Brenda	Speech Language Pathologist		Student/teacher ratio: 17.8:1
Sally	Guidance Counselor	Regional: 5/5/2014	Middle School B Students identified as minority: 14%
Rachel	Psychologist	Pilot: 8/28/14	Students eligible for free/reduced-price meals: 39% Student/teacher ratio: 17.1:1

Chapter 5: Feasibility of Using Social Network Analysis to Understand Social

Participation: Implications for Occupational Therapy Practice

Abstract

Social participation is an integral part of students' learning and well-being. The aim of this study was to investigate the current factors that facilitate or hinder the social participation of students with disabilities within an inclusionary setting. A feasibility study was developed that utilized a mixed methods approach with principles of ethnographic observation and social network analysis for a single case population. A purposive sampling of a seventh grade classroom including 60 students was selected; the class included two students who received educational services both within special education and general education classrooms, and required a paraprofessional to meet academic and social needs. Themes that emerged included (a) social participation embedded: opportunities designed and opportunities missed, (b) mixed messages, and (c) the art of initiation. Variables of centrality and cohesion were explored across three networks: friendship, positive/neutral, and unfavorable. Implications for occupational therapy practice and future research are discussed.

Introduction

A central premise of the profession of occupational therapy is the importance of engagement in occupation as it promotes positive psychosocial factors, and restores and maintains mental health and wellbeing (Fossey & Scanlan, 2014). Social participation contributes to health and wellness by providing for emotional and practical resources that are needed by the individual. Furthermore, a sense of belonging leads to individuals feeling cared for, esteemed, and valued which has a powerful protective effect on health

(WHO, 2003). Research suggests that individuals with larger networks and those with a higher degree of social embeddedness report fewer stress symptoms and have a better subjective health status (Gerich, 2003).

For this reason, it is concerning that participation in commonly held school roles and activities for students with disabilities is limited when compared to same aged peers (Coster et al., 2013; Raghavendra et al., 2012; Feldman, Carter, Asmus, & Brock, 2015). Students with disabilities participate in activities (e.g. classroom activities, fieldtrip and special events, school sponsored teams, clubs and organizations, and getting together with peers outside of class) consistently less than their peers without disabilities (Bedell et al., 2011; Coster et al.; Raghavendra, Olsson, Sampson, McInerney, & Connell, 2012). This decreased level of participation occurs both within school activities (e.g. art classes, serving as a student aide), and after-school activities (e.g. school clubs, school dances) (Simeonsson et al. 2001). Nearly half of adolescents with disabilities report missing out on activities that they want to do, and 19% report being made to feel unwelcomed by peers because of their looks, compared to 16% and 6% respectively of adolescents without disabilities (Edwards, Patrick, & Topolski, 2003). Furthermore, even when students with disabilities are present, it does not mean that they are engaged. For example, in the general education classroom, students with disabilities are only in proximity to students without disabilities on average 42.3% of class time, and are out of the class more than 15% of the time (Feldman, Carter, Asmus, & Brock, 2015). As such, even maintaining the critical role of class member can be difficult.

Eriksson (2011) notes that "The improvement and maintenance of health is dependent not only on individual behaviors but also on the behaviors of significant others

and the ability for fruitful communication within social networks" (pp. 6–7). Although individuals with disabilities often form strong bonds, these tend to be with family members, caregivers or other individuals with disabilities. As these bonds exist within a limited social network, and not with the broader community or in the school context, individuals with disabilities may not benefit from health outcomes commonly associated with strong social networks (Koutsogeorgou et al., 2014). Research finds that the lack of relationships with peers contribute significantly to conduct problems, delinquency, anxiety, depression (Murray & Greenberg, 2006), poor educational achievement (Reschly & Christenson, 2006), and internalizing and externalizing symptoms of psychological maladjustment (DiGennaro Reed, McIntyre, Dusek, & Quintero, 2011).

Positive social participation is related to academic success and performance, as it is an important predictor of grades (de Roiste, Kelly, Molcho, Gavin, & Gabhainn, 2012; Milson & Glanville, 2010). Social participation has also been linked with academic engagement, skill acquisition, development of social networks, and creating new friendships (Carter et al., 2011). As such, it is imperative that the social participation of students with disabilities be enhanced. Occupational therapy's focus on social participation, and its understanding of the impact of the social context on functional performance has the potential to address identified needs in this area. However, only 36.6% of occupational therapy practitioners report feeling competent in their ability to address social participation (Leigers, Myers, & Schneck, 2016). The aim of this research was to investigate the feasibility of using social network analysis and observation in understanding current factors that facilitate or hinder the social participation of students with disabilities within an inclusionary setting. Findings from this study will be used to

determine implications for occupational therapy practice and future development of social participation interventions. Examining interactions between students with and without disabilities utilizing a whole network sociocentric perspective has the potential to expand the current paradigm in understanding the impact of the context on inclusionary practices.

Method

A feasibility study was developed that utilized a mixed methods approach with principles of ethnographic observation and social network analysis for a single case population. A need for a feasibility study existed as the use of social network methodology is limited in the schools to those with high-incidence disabilities (Chamberlain, Kasari, & Rotheram-Fuller, 2007; van Asselt-Goverts, Embregts, Hendriks, Wegman, & Teuisse, 2015), those with physical disabilities (Raghavendra et al., 2012; Thirumanickam, Raghavendra, & Olsson, 2011), or those that utilized parent reports (Wendelborg & Tossebro, 2011). No research was found that analyzed the social networks of students with moderate to severe intellectual and/or social disabilities in a school setting that utilized both a questionnaire and observation to collect data.

Participants

Purposive sampling was used to find a case that met inclusion criteria. A seventh grade classroom, located in an area with a population of approximately 30,000, was identified. The school utilizes a college preparatory curriculum with over 98% of its graduates attending college each year. Middle and high school faculty and staff have received training in and have implemented principles of peer networks and peer supports

100

as a means of addressing inclusionary school practices. The fidelity of the implementation of the program was not assessed.

The seventh grade class consisted of 60 students, of which two, Pete and Ben (pseudo names used), were identified by the middle school guidance counselor as having moderate disabilities and whose academic and social needs required a paraprofessional throughout the day. Following approval from the University of Kentucky's Institutional Review Board, students were recruited through cover letter to the parents, and the principal investigator explained the details of the study to the students in their homeroom class. Out of the 45 students in the seventh grade class whose parents returned consent forms, all but two agreed to participate and signed informed assent resulting in a 71.67% response rate, sufficient for conducting whole network analysis (Stork & Richards, 1992). Participants included 22 males, and 21 females.

Quantitative Data Collection and Analysis

Social network analysis data was collected through the use of an online Qualtrics questionnaire from seventh grade students who were able to do so independently and from whom assent and parent permission had been received. Forty-one students completed the questionnaire; two students (Pete and Ben) contributed to the social network analysis data through observations of their interactions by the principal investigator. The questionnaire asked students to place the names of their classmates into one of four categories: 1) those they were friends with (defined as those you seek out to do things with or to talk to), 2) those they hang out with if they are there but who you don't seek out, 3) those you wish you were friends with, and 4) those they do not know. Participants were provided with a seventh grade class roster of names. If a name on the

roster did not apply to any of these categories, then the names could be left on the roster (e.g. not sorted). Names that were not sorted into one of these four categories were classified as unfavorable relations. As the unfavorable network was based on information not directly collected, caution was used in reporting and analyzing results. The positive/neutral network was formed by combining the categories of friendship, those they hang out with if they are there, and those they wish they were friends with. The friendship network included only those students whom individuals identified as being their friend. In addition, I asked for participants' gender, what school-sponsored clubs, teams, or organizations they participated in, and their knowledge of and/or participation in the school-sponsored program aimed at promoting friendship and inclusion of students with disabilities at their school. Additional qualitative questions were included as part of the Qualtrics questionnaire as well. Thirty minutes was allotted for students to take the questionnaire; all questionnaires were completed within that time frame.

I designed the questionnaire following training in social network analysis. Questions were derived utilizing the research questions, as well as with the intent to minimize negative feelings associated with middle school relationships. Experts on social network analysis associated with the University of Kentucky LINKS Center reviewed the questionnaire. Graduate Occupational Therapy students (n = 8) took the questionnaire and provided feedback regarding ease of use, time that it took to complete, and wording on question items. In addition, the questionnaire was piloted with a group (n=15) of adolescents who participated in a local youth organization. Recommended suggestions were included in the final version of the questionnaire.

I analyzed variables associated with structure, centrality and cohesion across the various networks. An exploratory approach was taken, a common initial step in social network analysis prior to developing a priori hypothesis. Collected data was entered into an adjacency matrix and converted for use in UCINET (Borgatti, Everett, & Freeman, 2002) and the NetDraw visualization tool (Borgatti, 2002). Missing data due to non-respondents was handled through reconstruction, a procedure in which non-respondent ties are inputted as 0 (zero). Measures of centrality and cohesion provided information regarding the relationships that exist within a cohort of seventh graders.

Qualitative Data Collection and Analysis

I collected fifty hours of non-invasive, non-participatory observational data over a period of five months (January 23, 2017 – May 18, 2017). As recommended by Borgatti, Everett, and Johnson (2013), ethnographic observations were made both prior to and post the social network analysis as a way to assure the reliability and validity of network questions and to confirm that participants have the skills and time necessary to answer the questions associated with a social network analysis. I utilized an observational guide (Appendix C), focusing my observations on those students from whom consent and assent had been obtained, but who were unable to independently complete the Qualtrics questionnaire. I also took observations of the interactions between students without disabilities. I collected observational data in public locations in which other adults were present. This included general education classrooms, special education classrooms, the library, hallway, cafeteria, the auditorium, community trips, the outside field, and the lobby. In addition, I collected data on each day of the week and across all school hours to ensure a complete compilation of available opportunities.

In addition, I collected qualitative data through short answer responses on the questionnaire that asked participants to identify things that they do with friends at school, barriers to getting to know others better, reasons for not being friends with some people, and what facilitates the relationships they currently have. Qualitative data collected was analyzed utilizing an emergent strategy to identify factors impacting social participation of students with disabilities, and the implications for occupational therapy practice. A thematic analysis of the data was undertaken to uncover themes utilizing a data-driven inductive approach (Patton, 2002). HyperRESEARCH qualitative analysis software (version 3.7.2) was used during the coding process. When necessary, multiple codes were assigned to single passages to denote multiple implications. A codebook with definitions to ensure consistency with coding was developed. During data collection and analysis, I used bracketing within a reflexive journal to acknowledge biases held, and to increase focus on the research question. This process was specifically helpful in maintaining a research point of view as opposed to approaching observations from a clinical standpoint. I have over fifteen years of experience in school-based practice, and have spent the last five years focusing on building my own knowledge of issues related to social participation in the schools. In addition, I have completed both the Virginia Leadership Education in Neurodevelopmental Disabilities at Virginia Commonwealth University, a Graduate Certificate in Developmental Disabilities from the Human Development Institute at the University of Kentucky, and have experience in conducting qualitative studies. I have also attended the University of Kentucky LINKS workshop multiple times to gain knowledge in its applications.

Results

Quantitative Results

The resulting core-peripheral social network of the studied seventh grade class yielded ties (relations or connections) that are directional (e.g. reciprocal relationships not assumed) and in which the scale is dichotomous (e.g. the strength of the relationship is not rated). The network consisted of one component indicating that all members of the network were connected to at least one other within the network. Measurements of structure, centrality and cohesion were visualized and interpreted. All figures were generated using NetDraw (Borgatti, 2002), which is included as part of the UCINET software (Borgatti, Everett, & Freeman, 2002). NetDraw uses a spring embedding algorithm that takes into consideration distances and positions of actors and events in the network accounting for visibility (minimizing overlap), centrality of actors, and tie length.

A core-peripheral network consists of two classes of nodes, a cohesive subgroup (the core) in which individuals are connected to each other with a higher density, and a subgroup (peripheral) of actors that are more loosely connected to the core and to each other. In a categorical analysis of the core-peripheral network, the friendship model (correlation of .4231 to model core-peripheral network) is composed of 17 students in the core group. Of these students, two participate in the peer support network program; Pete and Ben are in the peripheral. In the unfavorable network (correlation of .6659 to model core-peripheral network), 16 students compose the core group. Of these students, four participate in the peer support network. Ten students overlap in the core of both the

friendship network and the unfavorable network suggesting these individuals may

possess polarizing personalities.

Centrality. Centrality, a characteristic of the nodes, looks at the position of

students in the network. Both degree centrally and beta centrality were analyzed. Degree

centrality determines how many ties a node has coming in or going out. More

connections often mean more opportunities and less dependency or constraint. Actors that

face fewer constraints and have more opportunities are in a favorable structural position.

In a directed network, degree centrality is examined by both in-degree (number of ties

received) and out-degree (number of ties sent). In-degree centrality is typically associated

with popularity or prestige, while out-degree centrality is associated with influence.

Those with higher in-degree centrality tend to be active participants in the network. Due

to the response rate of just over 71%, focus was placed on in-degree centrality. Out-

degree centrality in a whole network analysis with incomplete data could result in

findings that are misleading. Results indicated that 11.9% of students in Ben and Pete's

seventh grade class indicated that they considered each their friend. This compares to

16.9% and 18.6% of students who indicated unfavorable ties toward Pete and Ben

respectively. Positive or neutral relationships were reported by 40.7% of students toward

Pete and 37.3% for Ben; these percentages include those that indicated having a

friendship with Pete and Ben. For the in-degree centrality descriptive statistics (mean,

median, and range) for the networks are presented in Table 1.

Beta in-centrality (Bonaich Power) for each student was also computed utilizing a

beta coefficient of 0.995. Beta centrality examines how well connected one is to other

well-connected individual. Students with similar in-degree centrality may have differing

106

beta centrality depending on whom they are connected to. It is typically advantageous to be connected to well-connected others versus being connected to others with weak ties. Beta in-centrality is visualized in Figure 1 representing the sociograph for the friendship network. Nodes representing students Pete and Ben are labeled with their pseudo-names. Figure 2 shows the friendship network visualization for students participating in the peer support network program and those who have knowledge of the program.

Cohesion. Cohesion is a measure of a group's connectedness within the network. Density, a common cohesion measure, is most useful in comparing networks. Density for the friendship network was .157 where a fully connected network would have a density of 1.00. The possible network size of the friendship network (k=60) yields 3540 possible ties (k*(k-1)). Density informs about the speed of which information or resources diffuse and is related to the communication pathways in the network. Denser groups allow for greater speed of information transmission and also create a context for greater social constraints as rules and norms tend to be more heavily enforced. In addition to density, analysis of data included homophily and brokerage.

Homophily is the measure by which actors tend to associate with those that share certain characteristics, or have a propensity towards those with shared interest. Krackhardt and Stern (1988) proposed a measure of homophily called the E-I Index. Utilizing mutually exclusive groups, the E-I index is calculated by the number of ties external to the group minus the number of ties that are internal to the group divided by the total number of ties. Scores range from one (1) showing heterophily to negative one (-1) showing homophily. UCINET controls for density and group size, and also provides a permutation test to see whether the index is significantly higher or lower than would be

expected if the edges were distributed entirely by chance. E-I index is provided for both

the network as a whole, and for individual nodes (Everett & Borgatti, 2012). E-I index

was utilized to analyze the influence of gender. The E-I index for gender was significant

($p < .05$) within the friendship network with an E-I index at -0.4183 suggesting that

female students are more likely to be friends with other females (E-I = -0.457), while

males are more like to be friends with males (E-I Index = -0.296). This tendency holds

true for Pete and Ben who both have an E-I Index score of -0.429 within the friendship

model. Homophily was also present at a significant level ($p < .05$) for the

positive/neutral network (E-I index = -0.133), whereas heterophily was seen at a

significant level ($p < 0.05$) within the unfavorable network (E-I index = 0.181) for

gender.

A linear regression model utilizing 10,000 permutations was calculated to predict

friendship based on shared school-sponsored teams/activities (e.g. basketball, band,

tennis) and gender. Significance was found ($p = .000$) for both participation on

teams/activities and gender with a R-square of .05327. Coefficient for sports/activities in

the linear regression model is .142, and coefficient for gender in the linear regression

model is .134.

Brokerage occurs when, in a triad of individuals, one individual is connected to

two others who are not connected to each other. Five types of brokerage scenarios are

possible; this data analysis looks at two of these – representative and gatekeeper (Gould

& Fernandez, 1989). In a representative brokerage, the individual receives (e.g. an open

invitation, attitude, or skill) from someone from within his or her in-group and brings that

information to someone in his or her out-group. In a gatekeeper brokerage, the individual

receives from his or her out-group and brings that information to someone in his or her in-group. Analysis of brokerage was analyzed using measures proposed by Gould and Fernandez. Thirty-four students (27 who were not in the peer network program and 7 who are in the peer network program) were in a position within the friendship network to be both a gatekeeper and a representative between individuals who are and are not involved in the peer support network program. A visualization of the results is presented in Figure 3 for the friendship network. Figure 4 depicts the ego networks of just students Pete and Ben.

Qualitative Results

Seventy-six unique codes were identified from the observations that were made, and from the short response questions that were a part of the Qualtrics questionnaire. The number of unique codes identified during each observational period become less frequent in subsequent observational periods. The final observation within the context of the school produced zero unique codes, supporting the criterion of informational redundancy (Lincoln & Guba, 1985). Codes were revised and refined in order to develop core categories that represented the data and demonstrated meaningful patterns. These categories were conceptualized into three distinct themes that were then compared against the original data. Pertinent extracts from the qualitative data were used to support the emerging themes. These themes were: 1) social participation embedded: opportunities designed and opportunities missed; 2) mixed messages; and 3) the art of initiation.

Theme one: Social participation embedded: Opportunities designed and opportunities missed. For students without disabilities, socialization occurs through naturally embedded opportunities throughout multiple contexts. However, the focus for

students with disabilities tends to be on knowledge acquisition and appropriate behaviors, with opportunities for social participation having to be specifically designed or built in intentionally. This theme is understood by looking at (a) collaborative-active learning versus individual instruction, and (b) the impact of context on social participation.

Collaborative-active learning versus individual instruction. The majority of time spent by students in the general education classroom was on active learning tasks involving group interactions. This is in contrast to students in special education, specifically Pete and Ben, who spent a greater amount of time completing worksheets for repetition or as a modification to more active, higher-level cognitive skills being completed in the general education classroom. Worksheets were utilized for all core subject areas both within the general and special education classrooms. At one point, Ben recognized that the worksheets were even being used multiple times:

> The substitute paraprofessional sat back to watch the students complete their worksheets independently. Ben flipped through his notebook to find the same worksheet that he had completed earlier. It had yesterday's date on it. The paraprofessional admonished Ben telling him not to look at that.

In the general education classroom, worksheets are provided in attempts to modify group work. This often left Pete and Ben either waiting or completing worksheets during times of group work in the general education classroom, missing out on the social engagement that comes embedded within the natural learning process of these group interactions.

> The special education teacher went to various student groups asking what they were doing…Ben laid his head down on the table, tired of waiting; Pete yelled out. He was quietly instructed by the special education teacher to calm down…The special education teacher brought Pete and Ben to a group just a couple of seats down. Pete and Ben observed for four minutes and then were instructed to return to their seats. There they sat with a worksheet and flashcards that covered similar content material using an auditory/visual approach instead of the hands-on approach available.

110

Although collaborative-active tasks tended to be the primary method of facilitating learning in general education classrooms, individual activity did occur. This often included the use of a quiz or test, answering questions out of the book, or working on class i-Pads. When these individual tasks were assigned, Pete and Ben, as instructed by the paraprofessional, would leave the classroom quietly and go to the special education classroom, missing out on opportunities to engage in unique social interactions. Interactions that occurred during these times of individual instructions often included seeking assistance from a teacher or other adult in the classroom, receiving praise or other form of feedback from a teacher circulating the classroom, or conferring with peers on the work that was being done. Students, during these individualized times of instruction, worked parallel but turned to each other as needed to discuss specific problems.

> One student walked to the back of the class to where the teacher was seated, asking for help with one-step inequalities. The teacher scanned the classroom and located a student who appeared to be working ahead. He asked that student to help the student in need. She eagerly agreed grabbing a blank paper and pencil and moving to where there were two empty desks in the back of the room.

Pete and Ben only received feedback on their work from adults, not from peers as other students did, and the feedback that they did receive typically occurred immediately, leaving no opportunity for Pete or Ben to initiate or learn how to ask for help. In addition, the paraprofessional was the one asking Pete and Ben what they had done the previous evening, what they brought for lunch, what their plans were for the weekend and other topics of discussion generally held by peer groups.

The social interactions among peers that occurred during or following an assigned task was often a reflection of the material that they received, allowing for a deeper understanding of the information.

> Pete and Ben left the field trip (located within walking distance of school) early. They walked quietly and quickly in an effort to get out of the cold, back to the warmth of the school building. Approximately five minutes later, all other students began their walk back. They walked in a herd, linking arms, bounding, jumping, and skipping to combat the cold air. As they did, they talked about what they had seen, what they would have done differently, and what they think should be done next time.

This missed opportunity to engage with peers happened daily as Pete and Ben regularly transitioned out of the general education classrooms early to walk the empty halls. Survey responses revealed that students saw lack of proximity as what prevented them from getting to know others better, and the reason that they were not friends with others (53% and 40% respectively). In explaining why someone was not a friend despite a desire to be their friend, one student wrote, "I don't have classes with him, and in the classes that I do have with him, I don't sit near them."

Another embedded opportunity for social participation missed by students with disabilities when they are pulled from the general education classroom is contributing to class discussion. Students without disabilities often raised their hands in response to a teacher's question or to respond to another student's comment, especially when given the opportunity to prepare an answer during individual work time. Observations revealed that, on average, 50 – 60% of students would raise their hand to add to comments being made . No observations were made in which either Pete or Ben raised their hand to contribute to class discussion or to ask a question.

Impact of context on social participation. The second area contributing to the theme on embedded opportunities for social participation is that of the impact of context on social participation. In each of the general education classrooms, Pete and Ben sat near an exit, typically in the back of the room. This allowed the paraprofessional to draw the student out of the class discreetly if it was felt that the material presented by the teacher could not be adapted or modified. It also allowed the students to enter into class late without causing a disturbance. In the special education setting, Pete and Ben sat at a U-shaped table with a smaller group of students. Adult to student ratio was 1:2. Arrangement of the tables allowed adults to either sit in front of the students rotating as needed, or next to the student. In both the general and the special education classroom, the special education teacher or paraprofessional typically sat or stood next to Pete and Ben. I observed this physical distance between the students with and without disabilities even during school outings or fieldtrips. One event included all middle school students attending a spelling bee to support the middle school's top spellers: "Pete and Ben sat in a row next to each other. Three empty seats separated them from the next student. The paraprofessional sat immediately behind him." Pete and Ben sat near each other in all classes and activities during the school day with only one exception. In the cafeteria, Pete and Ben were allowed to choose their own seats; Pete liked to sit at a table near a wall; Ben preferred a table in the middle of the room.

Peers were more likely to initiate a conversation with a student with a disability in the hallway or the cafeteria. Simple interactions such as a peer saying hello or giving a high-five in a relatively empty hallway or a peer choosing a seat next to the student with

disability in the cafeteria were relatively common. However, interactions between students with and without disabilities within the general classroom looked different.

> Pete and Ben came in the classroom right as the bell rang. They sat next to each other in assigned seats. Ben said "Hi" to those that were close by. Pete reached out his hand to those that passed. Despite these attempts to initiate interactions, none of the students responded.

In another observation:

> A peer walks in late to class and scans the room. Despite two empty seats next to Pete, the peer walks across the room and squeezes into an area, becoming the third student at a table for two.

When instructed by an adult, however, peers were willing to incorporate Pete and Ben into the activity to varying degrees. In highly competitive, in-class situations, peers were willing to have Pete and Ben with them but not directly involved in the activity. Peers would guide Pete to the location that he needed to be, but Pete was left to observe others as they competed in a timed event. However, peers would encourage Pete and Ben to participate more, under the direction of an adult, during situations in which there was less at stake, and in which the pace of the activity could be slowed. One example of this was a game of kick ball during gym class where participation was optional for all students. "Following cueing from the paraprofessional, peers showed Pete which direction to run after he had kicked the ball, and provided additional cheering and encouragement which motivated Pete to run more."

Students' level of social participation and role as a classroom member also shifted as students transitioned between the special and general education classrooms. Students with disabilities held greater student roles in the special education classroom – they were asked to distribute materials, they were free to stand up and go get supplies as needed, and they were all given a turn to comment on the curriculum presented. However, Ben

and Pete both sought interactions with peers in the general education classroom with more frequency. For example, Ben had to be prompted to say "hello" to his classmates in the special education classroom, but independently did so by name in the general education classroom. Furthermore, Ben's behavior during down time in the general education classroom resulted in him simply watching his peers, but down time in the special education classroom resulted in him often laying his head on the table, and occupying self with self-stimulating behaviors (mouth puffing, head rocking, and rubbing his teeth with his fingers). These behaviors were not seen in the general education classroom.

Missed opportunities for social participation related to the physical context were evident by the lack of presence of students with disabilities in areas that were often hubs for social interactions. These areas included the auditorium before classes started, the field and hallways during break, and the library. During afternoon field time and morning breaks, Pete and Ben engaged in isolated tasks in the special education room including computer games, i-Pad time, and drawing while peers were engaged in natural opportunities for socialization. During one observation of a morning break in the special education classroom, Pete and Ben were seen sitting next to each other, with the paraprofessional being the only other person in the room.

> Ben asked the paraprofessional if she wanted to see a video that he had made. She stated, "It's not time for that; it's snack time." Ben was given his snack and the paraprofessional sat back to check her phone. Ben leaned forward to try to get a look at her phone; he was told to stop being silly and eat his snack. He looked at Pete, looked away, and sat quietly with his gold fish.

Peers, in contrast, spent this time in a myriad of social activities.

> It was break time and throngs of students congregated in the hallways, quickly locating close friends. Students with money headed down to buy candy and hot

chocolate from the cafeteria together. Conversations were quick and brief. Students talked about what they were doing after school, with whom they were going to the dance with, and inviting others over for the weekend. As quickly as students had filtered into the hallways, they were gone. The last two students disappearing into a classroom as they looked at the screen of an i-phone together.

The hallway, in itself, was also a testament to the social participation of select students. Lockers were decorated with posters displaying student involvement primarily in basketball, archery, and cheerleading. Others were decorated with self-made collages of pictures depicting friend groups doing things outside of the school setting – ice skating, hiking, bowling, and visiting the state capital. One had a flyer for a dance that was coming up. Two lockers had happy birthday wishes taped to them. Highlighting the social participation of students embedded in natural learning and missed opportunities for students with disabilities was a sheet of paper attached to the wall that read, "Look What Our Middle Schoolers are Doing!"

> Under this sign, electives are listed and the names of each student who is in each class. The classes offer a variety of uniquely themed educational experiences that would be attractive to a diverse group of learners. Titles of the classes include Dr. Suess Readings, Wood Working, Myths and Legends, Newscast, and Outdoor Fitness. Missing from the rosters are the names of Pete and Ben.

Theme two: Mixed messages. An integral part of social participation is the awareness of others' beliefs and intents regarding one's acceptance and belonging in the social weave. Observations revealed that students with disabilities often receive mixed messages in what is already a very complex social organization with varying implicit and explicit rules depended on a wide range of variables. This theme is best understood through (a) the student as a class member, and (b) understanding rules and social norms.

The student as a class member. Although Pete and Ben were often physically in the general education classrooms, the message was not always clear that they were

members of the class. General education teachers primarily relied on the special

education teacher or the paraprofessional to provide class materials and content,

taking little to no ownership of the students with disabilities as their students.

Observations were made of teachers circulating the classroom stopping to provide

feedback to all students except Pete and Ben, not assigning Pete and Ben to class

groups for projects, and not having enough supplies to include Pete and Ben.

> The classroom teacher asked students to come get their i-Pad (each i-Pad has a
> number associated to the student's class number). Pete and Ben had never been
> assigned a number, despite this being their assigned class. By the time the other
> students had acquired their i-Pad, there were none left.

General education teachers also did not always have printouts for the students.

> The teacher asks students to take out their hieroglyphics packet. The
> paraprofessional sighs, and borrows a copy of the packet from one of the students,
> and leaves to go make two more copies for Pete and Ben…While she is gone, the
> classroom teacher passes out a quiz but does not give one to Pete or Ben…As the
> students take the quiz, the teacher walks around the room; she does not interact
> with Pete or Ben who sit waiting for instructions.

> The use of shared classroom materials also sends a mixed message regarding

student's role as a member of the class. In the special education classroom, students with

disabilities frequently and independently obtained shared supplies from common areas in

the classroom. However, in the general education classroom, Pete and Ben looked to the

paraprofessional for classroom supplies. The paraprofessional, likewise, brought

materials for Pete and Ben despite the presence of shared supplies in the general

education classrooms. Peers picked up on this:

> The paraprofessional gives Ben a gray crayon that she has pulled from her supply
> bag. A peer at Ben's table gets markers from the back of the classroom and places
> them in the middle of the table to share with others. Ben puts down the gray
> crayon and reaches for a marker. The peer, in an attempt to help, picks up the gray
> crayon and extends it to Ben saying, "I think she [the paraprofessional] wants you
> to use this."

Similarly, Pete and Ben do not see the classroom teacher as necessarily their teacher. The paraprofessional is recognized as the one that controls their daily events and as the one who structures their schedule. Pete and Ben often sit quietly listening to the instructions of the general education teacher but never acting on them. Instead, they wait on the paraprofessional to provide related, modified instructions, specific to them. When a general education teacher made an announcement that the class would be going on a fieldtrip to a local eating establishment, Ben understood that this announcement, despite the fact that he was in this class, did not necessarily apply to him.

> Ben pumps his fist in excitement…he turns to look at the paraprofessional to indicate to her that he wants to go on this field trip. She doesn't give him any indication one way or the other, but tells him to turn back around…. Ben again brings up the fieldtrip to the paraprofessional saying, "I want to go. Can we go?" She puts her finger to her lips and whispers, "We will talk about this later".

Ben and Pete did not end up going on this fieldtrip; however, they did go on a fieldtrip specifically designed for all students in special education, perhaps feeding into the perception that Pete and Ben are distinct in their membership as special education students.

One observed exception to this was a bowling alley fieldtrip that was an opportunity designed by the middle school guidance counselor as part of the school's peer-mediated approach to promote inclusion. Around thirty middle and high school students, those with and without disabilities attended including seven students from seventh grade. Students facilitated all activity, providing assistance as needed, with the exception of self-care. Adults stood behind the lanes in the viewing area allowing students to interact naturally.

118

Peers prompt Pete that it is his turn to bowl. Two peers follow him to the ball stand; two peers put the bowling assist ramp in place. As Pete walks to the lane with his ball, all four peers stay with him. Peers cheer loudly as the ball knocks down six pins. Pete has a huge smile on his face. The situation repeats for Pete's second ball, except this time Pete rolls a gutter-ball. His peers cheer just as loud; Pete continues to smile. High fives and fist bumps are offered freely.

Understanding rules and norms. Also contributing to theme two is the area of understanding rules and norms. Rules and norms regarding classroom behaviors are complex for all students, and guidance from teachers is expected at this level. One classroom assistant, in addressing classroom noise stated to the class, "We encourage you to socialize – you are in middle school, we know socialization is important but some of your friends need near quiet to concentrate. So let's monitor our own volume level a little more." Instructing on how to modify one's own behavior is in contrast to another general education teacher who insisted on no talking from any student even when she was not in the classroom. Rules and norms for engaging in conversation during class time extends beyond what physical environment one is in to what material is being covered, how it is being covered, and how far along a student is in completing their work. For example, one observation revealed that students behavior ranged from mandated solitude in order to complete work to a group of students practicing their dance moves learned in another elective course, all within the same environment, depending on how far along one was with the course material.

Pete and Ben were not always capable of reading the subtleties associated with implicit rules and norms, and often erred cautiously, sitting quietly waiting instructions while other students took every opportunity to socially engage. Pete was observed putting his finger to his lips and saying, "shhhhh" as the bell rang, even though neither the teacher nor paraprofessional was in the room. Five minutes later, 75% of students were

still standing at or near their desk as the teacher began to review questions in preparation for a test. Students listened and responded to questions from a standing position.

The need to be flexible in understanding rules and norms was also evident in adjusting one's language for various contexts. Ben expressed frustration in social norms that govern how to talk to certain individuals in certain contexts.

> Ben smiles as he recognizes an adult who has walked in and calls out, "What's up, girl?" The paraprofessional corrects Ben stating he cannot talk to adults like that at school. Ben slams his hand on the table and disagrees verbally stating that he knows her and can talk to her like that. The paraprofessional continues to provide feedback, making connections to other adults and situations in which slang in not appropriate.

Theme three: The art of initiation. Although being embedded within the social environment (Theme 1) and being accepted as a member of the social group (Theme 2) are crucial, there is significance to the seemingly simple act of knowing how to initiate a conversation. An in-depth look at this theme will explore (a) shared interests and homophily, and (b) the role of the adult.

Shared interests. Interactions often develop around shared interests. Thirty-nine percent of students who responded to the questionnaire reported shared interests as what helped to foster their current friendships, stating "My friend and I have a lot in common so it is easier for us to make conversation" and expressing the need to "find the group of people that share the same interests as you." Peers, who have an understanding of the interest of students with disabilities, and vice versa, allow for social initiation and sustained conversation. "In the hallway, another student said "Hi" to Ben. Ben smiled and the boy asked him about a video game that he knew Ben played. They talked about the video game as they walked down the hall together." The shared interest in a familiar video game created the opportunity for interaction.

Not only did shared interests serve as a means to initiate conversation with peers but also a way to form a deeper connection with teachers. Both Ben and one of his teachers shared an interest in sports. "The general education teacher greeted Pete as he walked into the room. Pete turned and asked the teacher a question; he responded with a basketball related answer. Pete smiled and went to go sit in his seat". Although this interaction was short, these types of interactions formed a sense of trust and connectedness. This teacher was the only general education teacher with whom Pete was observed initiating an interaction.

Shared interests lead to shared activities. Students reported that the things that they like to do with their friends at school include eating, doing homework together, planning for after-school events, and talking about clubs or video games. Students were observed practicing their lines for drama club, discussing scores from a recent sporting event, and talking about feedback they had received from a coach. Shared interests and activities can also center on physical objects. During one observation, Pete and Ben were removed from a general education classroom when the substitute teacher completed the assigned lesson with over thirty minutes in the period left. Peers who remained began to congregate around student-supplied materials. Five students pulled out ooblek and a sixth pulled out play-doh. Groups of girls and groups of boys formed, crafting items, engaging in imaginative play, and discussing why they had made what they had. These objects provided stems for conversation.

Technology use played a huge role in initiating conversation between students as well, and its use was seen in every context.

> By 7:40 a.m., the auditorium is a noisy bustle of conversation. Most of the
> conversation is centered on the use of technology. Several students share with

others their Facebook feeds. Another shows a student an app where friends can communicate with each other virtually.

In the classroom, students discussed with teachers the videos they have posted on their you-tube accounts and compared the number of followers that they each had. In the cafeteria, phones led students to lean together towards each other, shift body weight, and even stand up to hover over others, forming small masses around the electronic devices. The use of technology as a means for conservation initiation is seen in the observation of Ben in the cafeteria. At first, he does not notice the boy next to him and Ben continues to face forward eating his meal. However, approximately fifteen minutes into cafeteria time, Ben notices the phone.

> Ben leans towards his peer with the phone. His peer notices and shifts his body so that Ben can get a better view. They exchange brief words, sharing this activity for about five minutes before his peer puts the phone down. As he does, the boys continue to talk, incorporating the boys from across the table as well. Ben's verbal contribution to the conversation begins to decrease, but he continues to listen, and smile. Those around him continue to include him in their small circle at the table.

Phones are also used in the classroom for socialization. Students listen to music with peers (shared headphones) as they work problems together from the textbook, or play apps during classroom down time.

Related to shared interests and activities, student groups formed around observable common attributes of the group. In working in small groups in the general education classroom, students naturally formed all female or all male groups. However, groups sat close to each other and intermingled, not following strict gender lines. This same social structure existed in less structured environments such as the auditorium and the cafeteria as well. A small number of students also reported that friendship groups

tended to fall along socioeconomic lines or that they were not friends with others who were "different".

The role of adults. Considering the role of adults also supports theme three. The role of the adult is seen as both a barrier and as a facilitator of social engagement. When adults are around, peers often limit their interactions with Pete and Ben; however, adults in the environment can also help to initiate interactions between students with disabilities and their peers. This seemingly complex view of the adult is best illustrated in the observation of the science classroom during a project-based group learning activity.

> The special education teacher asked peers engaged in a group project how Pete and Ben could be incorporated. After conferring, they let her know that they couldn't think of anything that they could do. As the special education teacher walked away, one student leans over to another and said, "I know what Pete could do." The group agrees and the peer calls out, "Hey, Pete!" but Pete does not hear him because he is listening to the special education teacher read a worksheet. The peer looks up several times over to where Pete sits during the next five minutes but does not call out again. When the special education teacher leaves Pete, the peer goes over and taps Pete on the shoulder and gestures for Pete to follow.

In this case, the special education teacher has facilitated peers to include the students with disability by asking them to think of what role that Pete and Ben could have in the project; it is likely that this groups of students would not have independently initiated coming up with a means by which Pete could participate. However, the special education teacher was also a barrier as her proximity prevented the peer from engaging earlier with Pete. The student is willing to work with Pete, but is not necessarily willing to work with the special education teacher. The situation continues:

> The special education teacher observes what is happening and quickly grabs Ben and brings him over to the group as well. The students have assigned Pete a physical task that requires pulling paper at a certain speed. Although Pete appears to be handling the task, the special education teacher reaches in and provides additional physical assistance. As she does, Pete drops the paper so that the task is now being done completely by the special education teacher, and she is standing

123

between Pete and the rest of the group as they all hover over the project. As the special education teacher sees that Pete is no longer participating, she prompts Pete to go sit back down. The students in the group all shake his hand or give him a high five before he leaves.

Although the special education teacher may have inadvertently terminated Pete's social participation in this activity, it was also evident that, although brief, the interaction in this shared activity was viewed as successful on the part of the peers, potentially opening up future opportunities for engagement.

Another benefit is that adults can serve as a resource upon which peers can turn to if they have questions regarding how to interact. In another group activity within a different general education classroom, the paraprofessional has stayed in the back of the class allowing peers to facilitate Pete and Ben's role. The general education teacher uses a computer to randomly generate group assignments for short (15 minute) interactions in which small groups of students compete against each other in a quick recall format to study upcoming test material. I-pads are used to ring in and to select a response to a posted question. Pete and Ben are unable to respond quickly enough to provide support to their teams but they are engaged and have the opportunity to learn from both the interactions and the material that is being covered. However, as teams are switched up, a peer with whom Pete has been matched has difficulty communicating to Pete that he needs to follow him to a different area. The peer looks up towards the paraprofessional who comes from the back of the class to cue Pete to get up and move. During the next three transitions, the peer is able to cue Pete without any further assistance from the paraprofessional.

Discussion

       Although the importance of social participation in school-based occupational therapy practice has been captured in the literature, the use of social network analysis is a relatively new undertaking. Social network analysis expands the focus to look at the whole population with the understanding of the importance that context (physical and social) play on an individual's functional performance skills. With the passing of Every Student Succeeds Act (2015; 114th Congress S. 1177), occupational therapy practitioners have an exciting opportunity to focus more on the design and implementation of effective Tier I and Tier II interventions that are geared towards helping all students, in addition to continuing with individualized and directed Tier III interventions. This study, with the aim of investigating the feasibility of using social network analysis and observation in understanding current factors that facilitate or hinder the social participation of students with disabilities, led to three key findings with implications for occupational therapy practice.

       First, it is critical when assessing the social context that one has an understanding of where the student with the disability is located within the network, and the overall centrality and cohesion of the network, so that interventions can be designed to facilitate, form or strengthen relations as needed in ways that will promote social participation. An individual's "position in the network determines in part the constraints and opportunities that he or she will encounter" (Borgatti, Everett, & Johnson, 2013). A core-peripheral structure, such as identified in this network of a seventh grade class, results from preferential attachment with homophily and status aspiration playing a key role in students' social connections. Of particular importance is the consideration of the role of

gender. Data presented in this case study indicated that gender was a strong homophily both in the whole friendship network, and within the group of students who participated in the peer support network program. Resources may not have been well allocated in the training of the females within the peer support network if the primary objective was to increase the social participation of Pete and Ben.

Multiple different ties to various parts of the social network create for a more stable social environment, and open up greater access to information, involvement, and possible relationships. However, students with disabilities may not understand that individuals on the edges of their network are potential links to other possible relations (Kreider, Bendixen, Mann, Young, & McCarty, 2015); this concept was evident to peers without disabilities in this study. One student reported, "When you hang out with a friend who is in a group of friends, you hang out with other people so you eventually become friends." Beta centrality in this study indicated that male students within the peer support network were not connected to well-connected others, despite having similar in-degree centrality, thus limiting the reach that Pete and Ben had to the rest of the social network.

All but two students (one male and one female) who were part of the peer network program were in the peripheral of the network, including Pete and Ben. The two students who were part of the peer network program and who were in the core were not within the subgroup of students connected to Pete and Ben. Similar results are found in the literature across ages and disability category. For example, social networks of students with high-functioning autism in second through fifth grade general education classrooms were more likely to have lower levels of centrality, and more likely to be on the periphery (Chamberlain, Kasari, & Rotheram-Fuller, 2007). Another study showed

that sixth-graders identified as high-risk for ADHD (10.2% of the 562 participants) were found to have significantly lower values of degree centrality and, also, were more likely to be on the periphery of the network (Kim et al., 2015). Novel ideas often begin and take root in the peripheral of networks, before spreading to central core individuals. Furthermore, "complex contagion" needed for changes in attitude and behavior often requires affirmation from multiple redundant sources (Centola, 2007). Identification of a triad that connects both a gate-keeper/representative and a core member of the friendship network may be most influential in supporting inclusionary practices. Evaluating the presence of students within Pete and Ben's friendship network revealed students who identified Pete and Ben as friends but were not aware of the program that facilitated their inclusion into the social network of the school. These ties, furthermore, had ties into the core of the structure of the network.

Attention needs to be given to the connections of the peers that students with disabilities are matched with. Extended connections have impact on the behaviors and attitudes of those they may not even be directly connected to. For example, research by Cacioppo, Fowler, & Christakis, (2009) found that a lonely friend makes one 40 – 65 percent more likely to be lonely, a lonely friend-of-a-friend makes one 14 – 36 percent more likely to be lonely, and a lonely friend-of-a-friend-of-a-friend increases the chances of one's loneliness by 6 – 26 percent. Therefore, once students are chosen as part of the peer support network, resources and training should also be extended to the friends of these individuals even if they have no intention of being active participants in the program. Although results regarding the unfavorable relations were not represented in

depth, these should also be considered as they may be a social liability, and may have more influence on the network than positive ties (Brass, 2012).

Second, there is a need to take advantage of already embedded opportunities for social participation often missed by students with disabilities, and structure activities so that students with disabilities are engaged in more than just parallel activities within the same spaces. To do so, practitioners must advocate and educate on the need for students with disabilities to be in the general education classroom at all time in order to take advantage of the academic and mental-health benefits of social participation. This study supports previous findings that students with disabilities spend less time in general education classrooms by arriving late and leaving early, and often sit out of proximity of other students (Wendelborg & Tossebro, 2011; Feldman, Carter, Asmus, & Brock, 2015). General education teachers may be more inclined to see the student with disability as one of "their" students if regular daily attendance for the full length of the class period is maintained, and teachers are incorporated into the dialogue on how students can take advantage of naturally occurring opportunities for socialization. Furthermore, the probability of interaction is inversely proportional to the square of the distance (law of propinquity) (Reagans, 2011). Individuals need to be physically close together to increase interactions. As such, students with disabilities should be placed in a centrally-located classroom space, in midst of peers who can provide basic assistance, and to whom the presence of a paraprofessional intermittently might also be of benefit. The concern should not be whether the student with a disability would be a distraction, but whether the student will have an active presence in the classroom.

Collaborative group activities also need to be structured so that emphasis is on the process, and not solely on the outcome. Activities should allow for the modification of pace, and provide for multiple roles that various students could rotate through. Activities should promote higher-level engagement, and allow for students with disabilities to not exclusively be placed in the role of parallel participant or observer. Examples include providing the student with the disability the answer key so other students would come to him/her to check their work, or developing the role of the "quick recall marshal" whose job is to identify who rings in first. Ideas are limitless and do not have to impede on good teaching philosophies or practices of general education teachers. Occupational therapy practitioners should also focus on structuring activities that require various activity types of involvement including associative (e.g. ensure students have access and are sharing the same materials) and cooperative where students work towards a shared goal.

Social structure must also extend beyond the general education classroom and into the social hubs of the school building as well. Occupational therapy practitioners should work with the team in order to eliminate barriers to socially embedded areas such as break areas and the hallway. Examples would include ensuring that students with disabilities spend their break time in areas that other students do, developing a morning routine that includes arrival before class to spend valued time with friends, or teaching a student with disabilities how to text as an additional means of communicating. Alternately, the occupational therapy practitioner could collaborate with administration, staff, faculty, and parents to prepare the student for participation on a school-sponsored team, club, or organization depending on their interests. Currently, students with

disabilities are represented significantly less than their peers in these activities (Bedell et al., 2011; Coster et al., 2013; Raghavendra et al., 2012).

Third, a centralized vision regarding the value and contribution of all students needs to be developed. This vision needs to be shared by administrators, practitioners, teachers, and staff. Making system wide changes takes a team approach. The occupational therapy practitioner brings to the table knowledge of task analysis, adaptation, and the interrelationship of how the social environment impacts functional performance. Conversations should include how to best model to students in the general education classroom acceptance and understanding of diverse others who may not have the ability to comply with societal norms.

This shared vision needs to be communicated to all students, and specifically those that participate in the peer-mediated approach. These students have knowledge and experience that they can share with their peers, and if they are in position of influence, will have the ability to affect the behaviors of others. Fifteen percent of students in this study reported that they were not friends with others because the person was "different". Utilizing the peer network, students with disabilities need to be connected to core, centralized individuals who demonstrate acceptance of the student with disability as they find common interests. This modeling may prove to impact both attitudes and behaviors. These peers may also prove to be a good line of defense against bullying as findings suggest that peer interception is most effective at stopping negative behaviors towards those with disabilities (Bourke & Burgman, 2010).

Social network analysis provides a language, perspective, and empirical findings that can describe the structure of informal networks. The utilization of social network analysis is well documented in the literature as feasible in multiple settings including assisted living and dementia special care units (Abbott, Bettger, Hampton, & Kohler, 2015), obesity prevention interventions (Marks, Barnett, Foulkes, Hawe, & Allender, 2013); and child health promotion (Guldbrandsson, Nordvik, & Bremberg, 2012). Social network analysis can help to identify opinion leaders, how information spreads, who holds informal power within the social context, and who shares similarities in attributes most closely with others. The results of this study indicate that the use of social network analysis and observations is a feasible approach in understanding the social participation of students with disabilities in a middle school inclusionary setting, especially as schools work towards developing interventions that address social and emotional well-being. Social network analysis provided information regarding the relations between students with measures looking at structure, centrality, and cohesion. The principles utilized could be further expanded to examine how one's position and ties within these social networks impact academic areas such as GPA, test scores, or progression, or could be applied to social and behavioral areas such as friendship, inclusion, bullying behavior, or attitudes toward others. Leisure interest checklist or play profile could be incorporated so as to facilitate the involvement of students with disabilities with others who share similar interests.

Use of a whole network analysis may be particularly appealing to a school-based special education team implementing a new program or exploring the effect of a system-

131

wide intervention. Changes in ideas and beliefs will be affected by social influences (Brass & Krackhardt, 2012) and make take exposure and contact over time. Taking a longitudinal approach and measuring the social network at various points would provide important data that could either support or suggest modifications to current practice. The literature supports the feasibility of such an approach. A longitudinal social network analysis was used to examine how a social-emotional learning intervention changed social processes in a classroom peer network of fifth graders resulting in more diverse friendship choices, and improved writing and math performance scores for the control classroom (DeLay et al., 2016). Furthermore, adaptions to the questionnaire used in the current study could be made to decrease participant burden, such as eliminating open-ended qualitative questions, or only asking students about their top three friendships.

Strengths and Limitations

This research took steps in order to increase its credibility, transferability, dependability, and confirmability. Such measures included prolonged engagements and persistent observation, triangulation of data collection, reflexivity, and member checking the findings of the study with the school's representative. Thick, rich description of observations, balanced by ethical requirements for protecting participants and the anonymity of the school, was included to support findings. Also an asset to the data collection and analysis was my own education and experience, including my LEND (Leadership Education in Neurodevelopmental Disabilities), and graduate certificate in Developmental Disabilities background, over fifteen years as a school-based occupational therapy, and my training in social network analysis. In addition, I sought out information and expertise on how to address special ethical issues related to conducting social

network analysis. A further advantage of this study is that it approached understanding of the social participation of students' with disabilities from a whole network perspective, exploring not only the subpopulation of students with disabilities, but the role of all students and their interactions with each other. This research will contribute to the design of future research and will add to the discourse that looks to identify best practice approaches for occupational therapy practitioners who work to facilitate the social context that supports the educational needs of students with disabilities.

Limitations of the study include inability to collect data from all participants. Social network analysis literature shows a range of response rates from 65% to 90% (Stork & Richards, 1992). This study achieved a response rate of 71.67%. Data analysis was conducted so as to capitalize on robust measures, such as in-degree and beta centrality, which can be calculated for all network members, even non-responders. In addition, two students were unable to complete the Qualtrics questionnaire independently due to cognitive limitations; alternative methods of data collection from these individuals were planned for prior to data collection. Although information regarding their interactions was gathered through observations, a subjective personal perspective from the student was not gained.

A second limitation was drawbacks of the questionnaire. One student after taking the questionnaire reported that she was not sure what the word "foster" meant which was used in one of the short response questions. Two students reported not understanding what was meant by if they "knew someone." These students were confused if that meant that they did not know them at all, or if it meant that they didn't know them on a deeper level. This question should be reworded in future studies. Due to concerns with survey

fatigue (Porter, Whitcomb, & Weitzer, 2004), some questions were eliminated from the survey that would have been insightful. Particularly, questions regarding participants' attributes such as their socioeconomic status, number of years they attended their current school, and their knowledge of others with disabilities outside of school would have provided to the discussion on homophily. In addition, a question that addresses the strength of the ties between students may be helpful. Although, advice, invitations, friendships, or assistance can come through weak ties just as they do from strong ties, stronger ties may provide information regarding the stability of the relationships. A question regarding students' willingness to engage with others with disabilities would also indicate whether the student may even be interested in participating in a peer support network program. Finally, the majority of students took the online questionnaire on iPads. This likely limited their response to open ended questions.

In addition, a limitation exists regarding the reliability in the coding and data analysis of the qualitative information due to the study being conducted by a single researcher. Thick, rich description, and raw observational data is incorporated so as to provide support to the creation of codes and categories, and the emerging themes (Creswell & Miller, 2000). The researcher also has knowledge and experience in conducting qualitative research.

Future Research

Continued research utilizing sociocentric network analysis to explore the social participation of students with disabilities in the schools is highly encouraged. Future research should incorporate a longitudinal approach in which the importance of temporality in networks can be observed. This may serve as important information

134

regarding the natural changes that occur, especially during the middle school years, as all students explore who they are and where they fit in. Longitudinal studies utilizing social network analysis would also be important to detect changes that occur with the introduction of a peer-mediated program and form the basis by which one could evaluate the program. Furthermore, additional attributes of students should be explored to determine their impact on engagement and interaction with others with disabilities. Such attributes could include knowledge of and exposure to others with disability, career trajectory, and internal personality traits such as caring, empathy, self-confidence and/or loyalty. The impact of school and regional cultures would also be an important attribute to research as cooperative versus competitive norms may be an important moderator of network effects. Refinement of network data collection tools for use by schools is also needed, exploring the potential of incorporating both sociocentric and egocentric network analysis. While a sociocentric network allows a macro view of the organization, providing information regarding the composition as well as changes in the structure as a whole, an egocentric approach would be helpful in determining what supports or information is being provided directly to the student with the disability. Examples may include sharing of classroom supplies or notes, providing information on areas of interest, or inviting the student with disability to an after school event or to a study group.

Conclusion

Social interaction is a behavior that cannot be mandated, but it can be facilitated. The social networks of children and youth with disabilities in schools needs to be addressed to fully understand and promote the contributory role that these students play within their educational context as students, peers, participants, and friends. Occupational

135

therapy practitioners have the opportunity, and the capacity to address this issue and to strengthen supports and minimize barriers. Occupational therapy practitioners need to advocate and have a clear and articulate message regarding the profession's role in addressing social participation in the schools, in order to effectively collaborate with teachers, administrators, staff, and other school personnel in the development and implementation of programs and interventions to promote social interaction among all students and the social participation of students with disabilities in inclusionary school settings.

Table 1: In-Degree Centrality

	Friendship Network	Positive/Neutral Network	Unfavorable Network
Whole Network (N= 60)			
Mean	8.62	20.58	8.27
Median	9	26	9
Range	2 – 19	13 – 34	1 – 14
Know about program (n = 19)			
Mean	7.63	24.37	9.32
Median	7	24	9
Range	2 - 14	15 - 34	3 - 13
Participating in program (n = 12)			
Mean	8.00	23.50	9.83
Median	7	23.5	10
Range	2 - 10	19 – 29	7 - 13
Students with Moderate to Severe Disabilities			
Ben	7	22	11
Pete	7	24	10

Figure 1: Sociograph of Friendship Network
Node shape indicates gender (circles = males, squares = female); Node color indicates knowledge/participation in peer support networks (gray = no knowledge/no participation; blue = knowledge/no participation; purple = knowledge/participation); Node size represents Beta centrality.

138
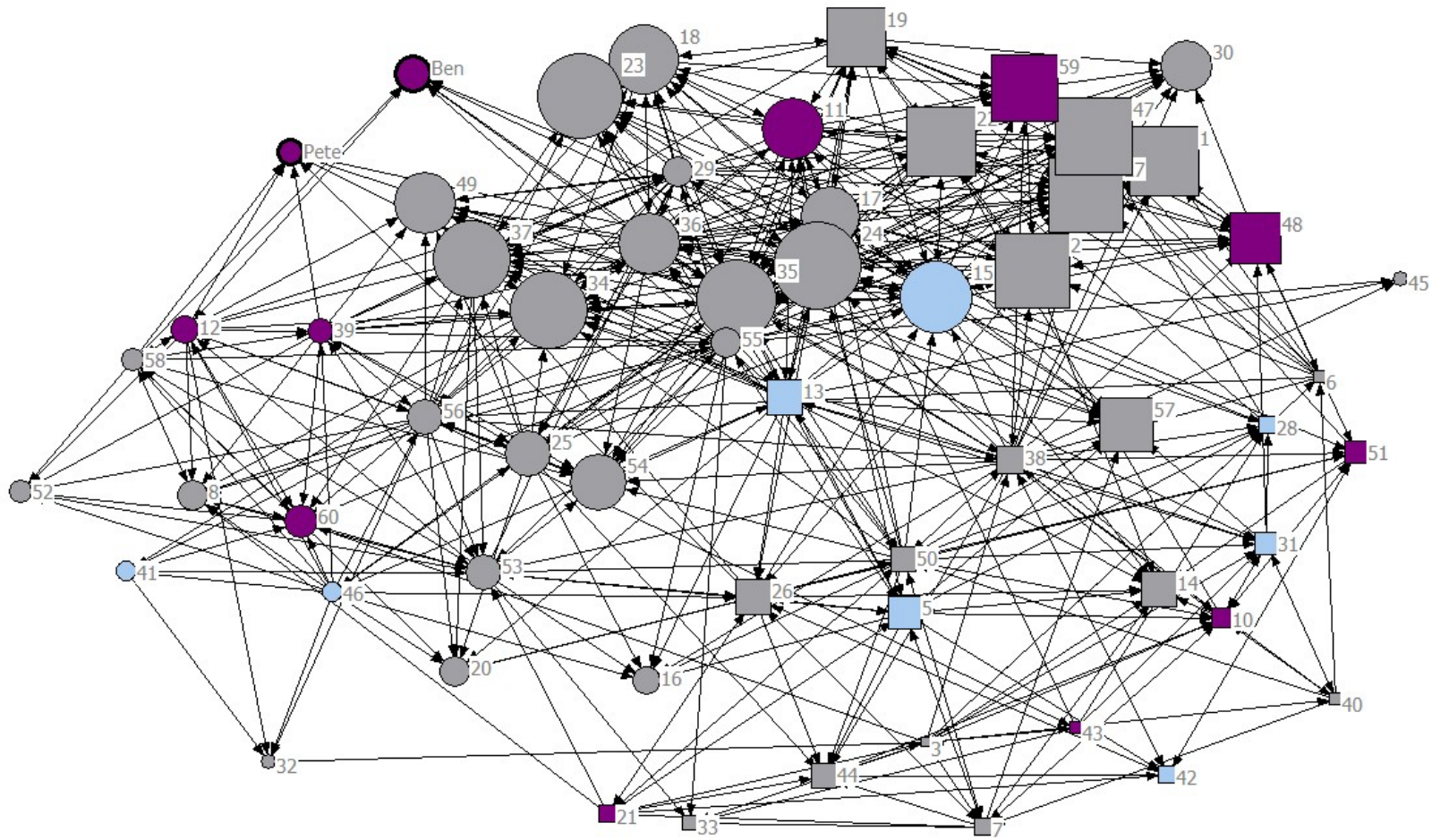
Figure 2: Students' Participation in (Top) and Knowledge of (Bottom) Peer Mediated Program in the Friendship Network

Node shape indicates gender (circles = males, squares = female); Node color indicates knowledge/participation in peer support networks (blue = knowledge/no participation; purple = knowledge/participation); Node size represents Beta centrality.
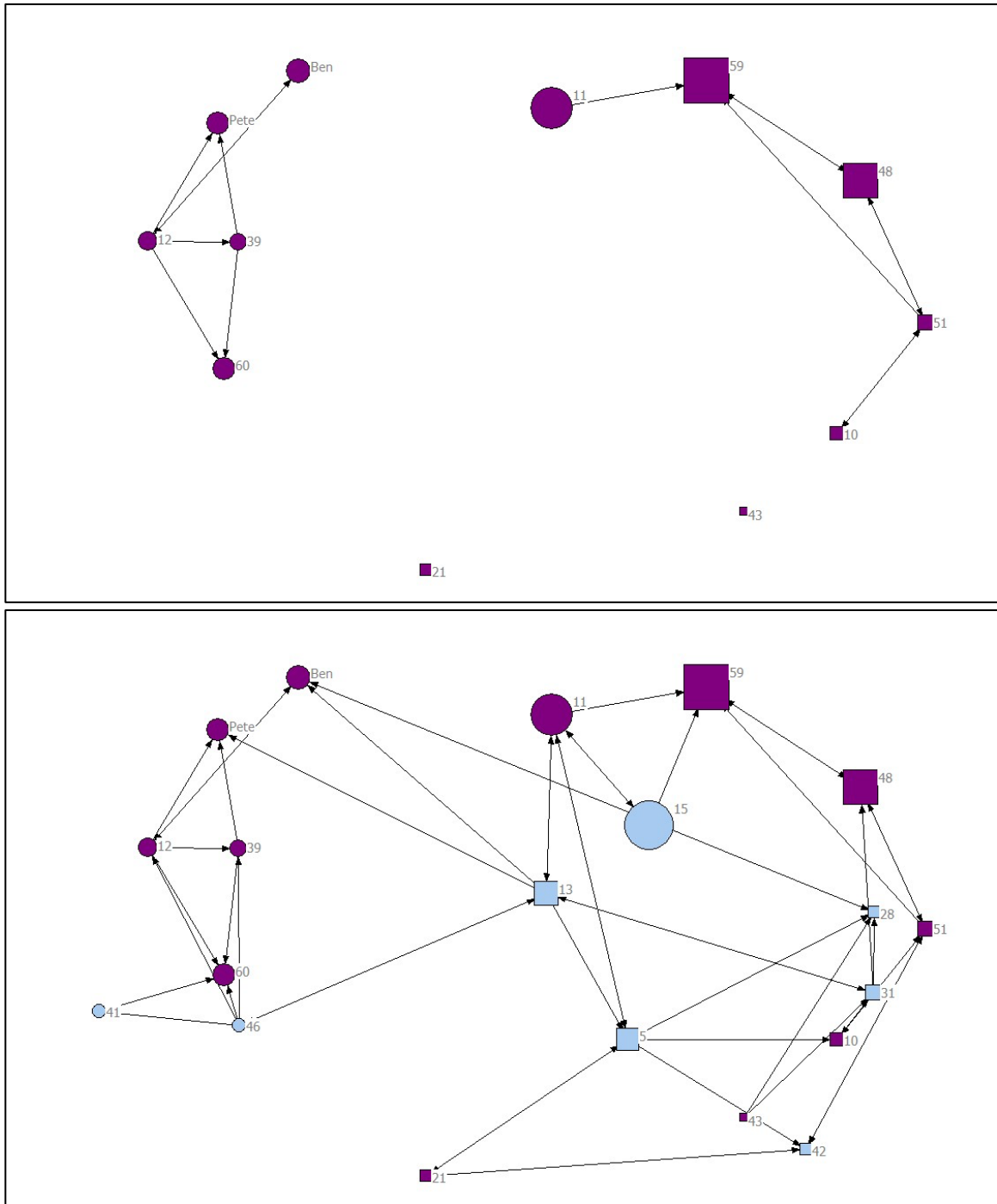
Figure 3: Sociograph of Friendship Network Visualizing Representative Brokerage
Relationships (Top) and Gatekeeper Brokerage Relationships (Bottom)
Node shape indicates gender (circles = males, squares = female); Node color indicates
knowledge/participation in peer support networks (gray = no knowledge/no participation; blue =
knowledge/no participation; purple = knowledge/participation); Node size represents brokerage
relationships.
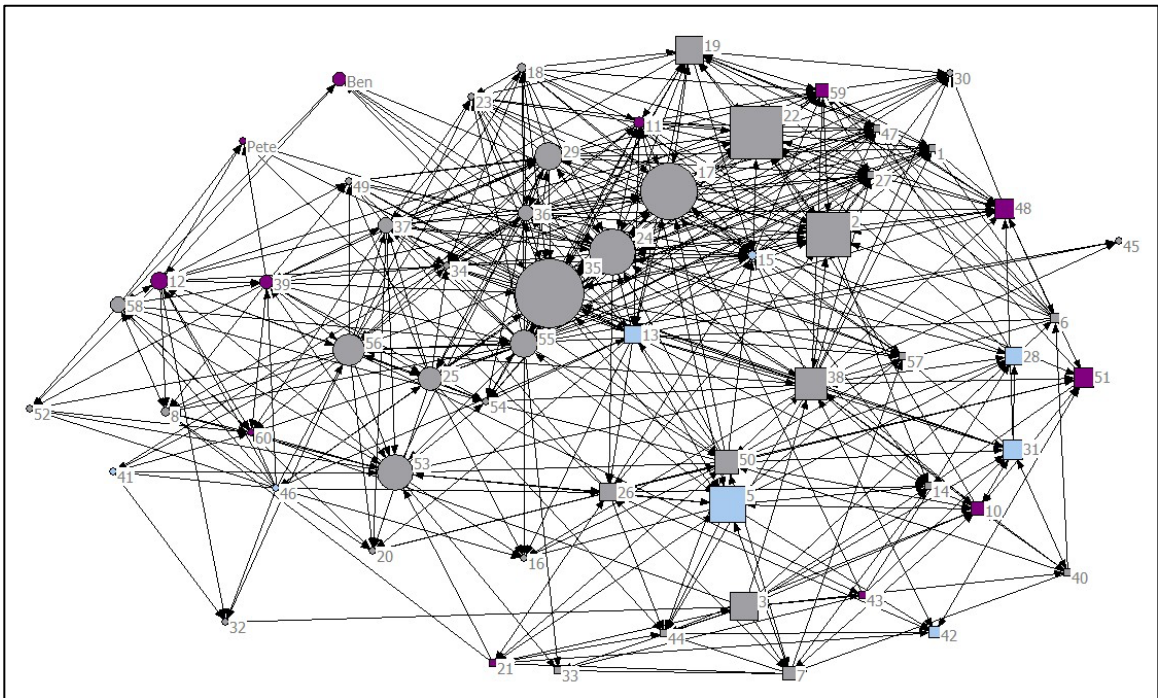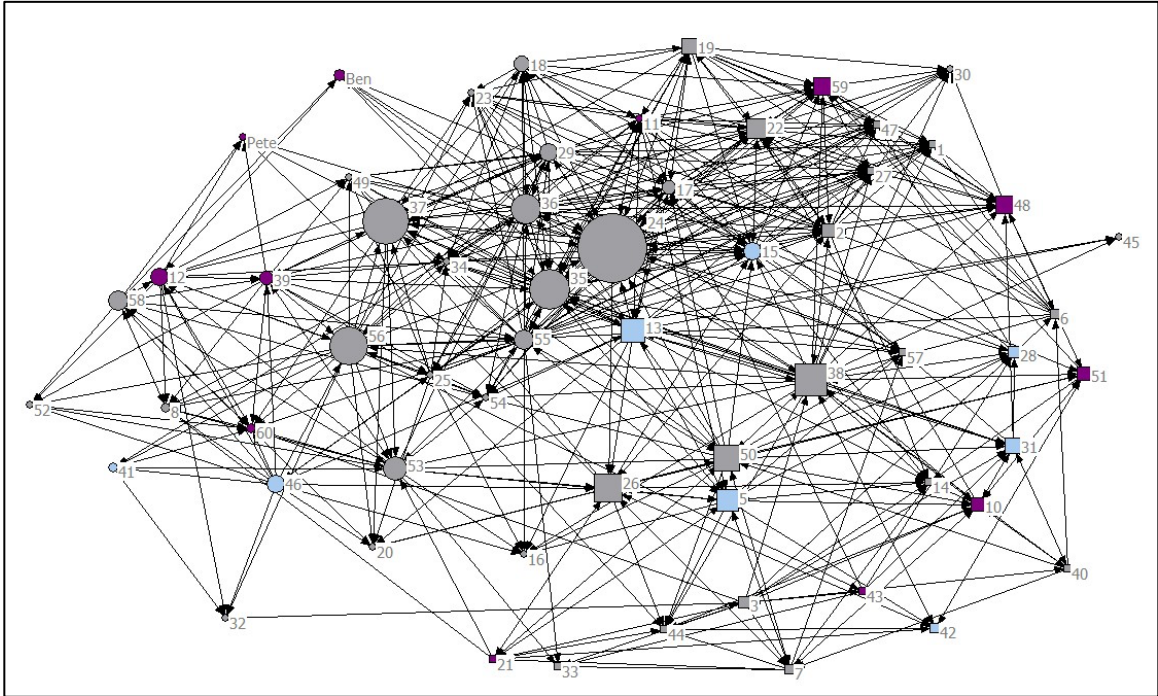
Figure 4: Ego Friendship Networks of Pete and Ben Visualizing Representative
Brokerage Relationships (Top) and Gatekeeper Brokerage Relationships (Bottom)
Node shape indicates gender (circles = males, squares = female); Node color indicates
knowledge/participation in peer support networks (gray = no knowledge/no participation; blue =
knowledge/no participation; purple = knowledge/participation); Node size represents brokerage
relationships.
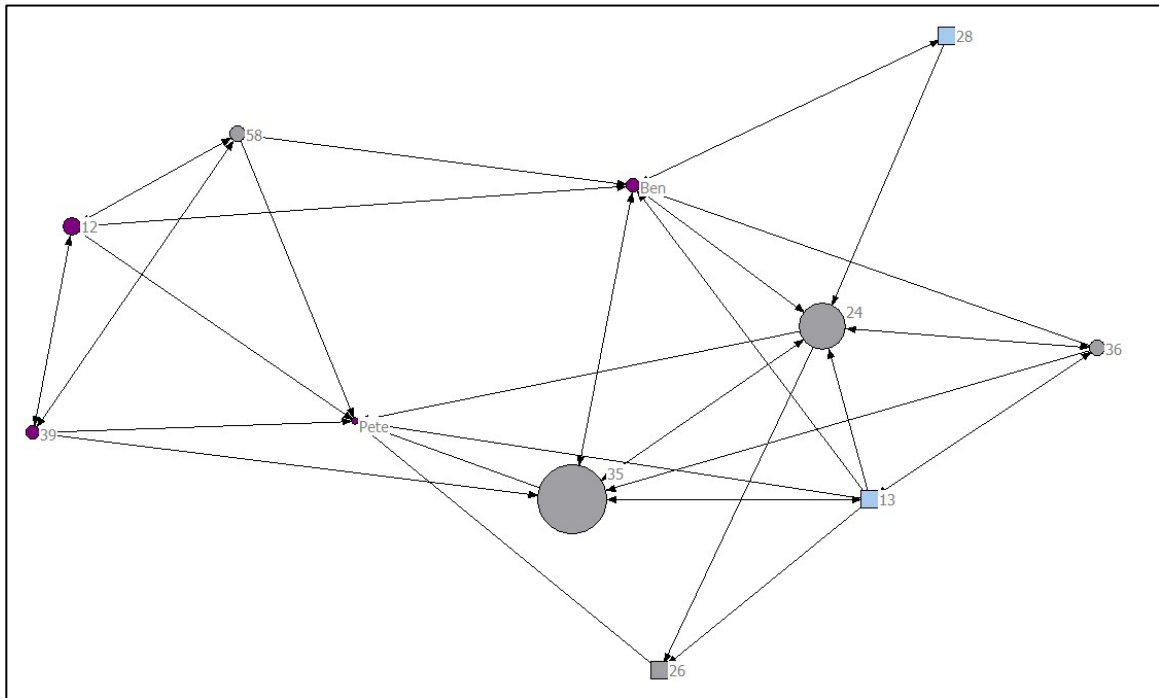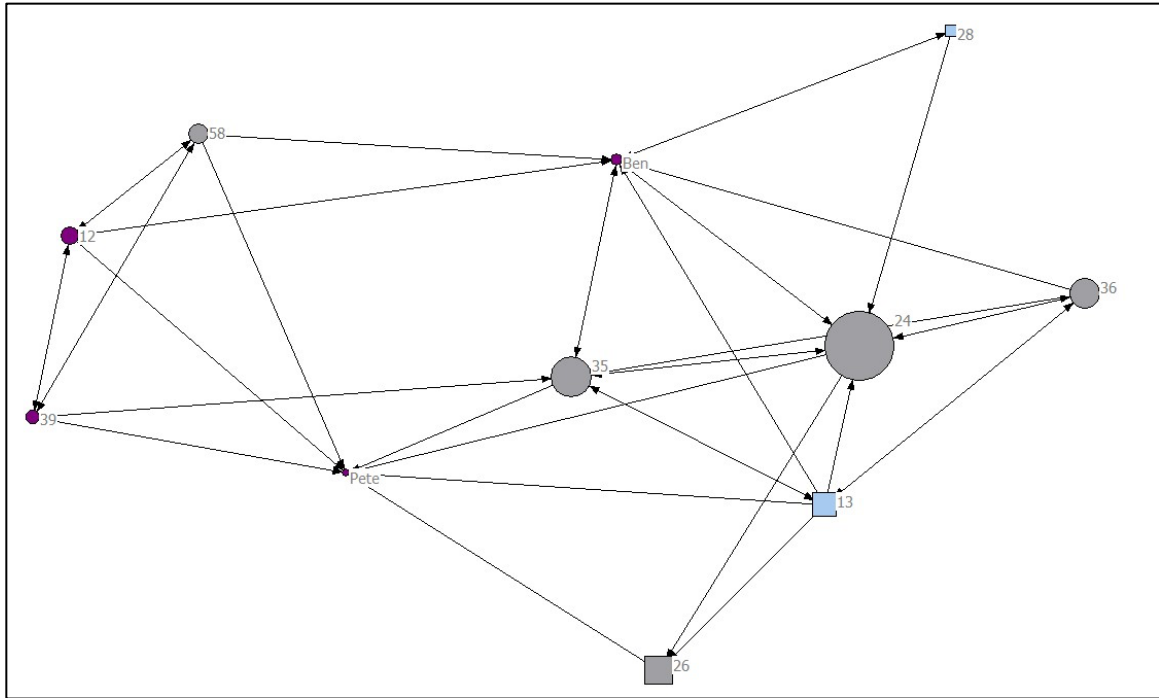
Chapter 6: Discussion and Conclusions

Four studies investigating the concept of social participation of students with disabilities in order to gain a better understanding of intervention strategies, current practices, and the developing role of the occupational therapy practitioner have been presented. This chapter will summarize the results of these studies, and identify common threads that were found through multiple studies that speak strongly to the implications for occupational therapy practice. These findings will be supported by current literature. Furthermore, potential research directions will also be explored.

Overview of Study Findings

Study 1. The first study (Leigers & Myers, 2015) investigated the effect of duration of peer awareness education on attitudes toward students with disabilities through a systematic review. This study suggests that the occupational therapy practitioner should utilize Tier I interventions utilizing an emotional-behavioral approach to address the attitudes of those within the social context of the student with disability. These interventions should be of sufficient duration that it allows for the provision of practical knowledge so that peers may feel what it is like to have a disability, and what they can do to facilitate increased interactions with students with disabilities. Furthermore, Tier I programs should focus on the ability and the social contributions of those with disabilities so that students will be recognized for being contributing, valued members of the class. This work should be done in collaboration with teachers, staff, and administrators so that a united message can be sent in creating a safe climate that promotes participation and equality.

Study 2. The second study (Leigers, Myers, & Schneck, 2016) explored the strategies and practices that school-based occupational therapy practitioners use in addressing social participation, and influencing factors. In addition, the perception of practitioners' level of competence was also examined. Results indicate that steps need to be taken to strengthen occupational therapy's role in addressing social participation with specific recommendations provided to 1) educate people on their team and in the school community about the valued role of occupational therapy in school-based mental health; 2) implement best practice in working with people within the social context of student with disabilities to facilitate their social participation; 3) collaborate with administrators in supporting school-wide initiatives and programs that support students of all abilities and advocate for changes in policy and procedures, and 4) assess social participation needs and provide appropriate intervention (Leigers, Myers, & Schneck, 2016).

Study 3. The third study (Leigers, Kleinert, & Carter, 2017) sought to examine peer supports and peer networks from training to implementation. Three themes emerged. The first was a greater understanding of the role that context and structure of the school plays in program implementation. This included how implementation was more effective when it could be built into a pre-existing structure, how positive perceptions, attitudes and behaviors were required for successful implementation, how purposeful scheduling and coordination among team members was needed, and how training of peers was essential. The second theme focused on the perceptions of the training received for program implementation. Through this, participants found benefit in being able to gain a greater awareness of the issues, develop relationships for collaboration purposes, and develop goals specific to their needs. The third theme highlighted the benefits of the

program including friendship development, increased inclusion of students with disabilities, and better learning outcomes for students with and without disabilities.

Study 4. In order to further understand social participation in school-based settings, the attitudes and behaviors of the student was investigated in this fourth study looking at factors that promote and hinder social participation of students with disabilities. Three themes emerged. The first theme explored how social participation is embedded in the natural learning process, but for students with disabilities opportunities for social participation are often missed, resulting in needing social participation opportunities that are specifically designed for them. This theme looked at opportunities embedded within various types of learning and instruction as well as the context of social participation, looking particularly at proximity and access to multiple settings within the school. The second theme, mixed messages, revealed discrepancies in the perception of the student with disability as a member of the general education classroom, and the difficulty that arises from varying social rules and norms that impact what is considered appropriate behavior. The third, and final theme, the art of initiation, emerged as student relations were seen to center around shared interests and attributes associated with homophily. It further explored the role of the adult in peer to peer communication, and how the adult can serve as both a facilitator and barrier to initiating social participation. These findings were supported by the social network analysis that identifies the position of students with disabilities in a core-peripheral network with implications for designing and implementing a peer-mediated program.

Implications for Practice and Connection to the Literature

Social participation is seen as one of the eight areas of occupation presently addressed by the profession of occupational therapy. It is distinguished from other occupations through its inclusion of "desired engagement" in the community with family, peers, and friends (American Occupational Therapy Association (AOTA), 2014). For the occupational therapy practitioner, environmental evaluation is part of the scope of practice, and theoretical models support assessing the fit of the environment to the person (Dunn, Brown, & McGuigan, 1994; Law et al., 1996). This unique professional rehabilitation lens has impact on the interventions that are designed and implemented for the student with disability. Several key components were found to be threads through multiple studies. These have implications for occupational therapy practice, and resonate with current literature on the topic. These threads included the need for 1) provision of practical knowledge, 2) collaboration, 3) facilitation of membership in valued school roles, and 4) structured activities. Table 1 provides implications for practice across these four topics.

Providing practical knowledge as a key element in Tier I services was first seen in the systematic review (Leigers & Myers, 2015). Through this research, it was found that interventions that focused on providing students with the "how-to" approach in interacting with peers with disabilities was more effective than just providing factual knowledge about the disability itself. This emotional-behavioral approach leads to increase confidence in communicating with and working alongside students with disabilities (Whitehurst & Howells, 2006). This is often missing in occupational therapy interventions as practitioners report that they often do not work with peers in general

145

education or special education classrooms (16.2% and 27.9% respectively) (Leigers, Myers, & Schneck, 2016). Students without disabilities reported being eager to receive practical knowledge as they valued and gained pleasure from connecting with others, and, for some, saw it as a chance to learn career readiness skills (e.g. they planned on going into the medical profession) (Leigers, Kleinert, & Carter, 2017).

Although occupational therapy practitioners should provide direct client-centered social skills training to students with disabilities, this should not be done in isolation as research suggests that it may have little effect on the outcome of social participation (Evans & Meyer, 2001; Kasari, Rotheran-Fuller, Locke & Fulsrod, 2012). Students with disabilities do not exist in isolation, and should not be treated as though they are. Occupational therapy practitioners should educate peers regarding practical techniques for behaviors such as when and how to initiate conversations, how to invite students with disabilities into group projects, how to provide and receive appropriate assistance, methods by which to provide feedback, and how to build on the strengths/abilities of the student. Educating peers should utilize multiple forms of approaches to engage multiple types of learners as this has combination approach has been found to be more effective than any single method (Leigers & Myers, 2015; Favazza, Phillipsen, & Kumar, 2000; Ison et al., 2010; Salend & Moe, 1983; Leyser, Cumblad, & Strickman, 1986). Furthermore, occupational therapy practitioners can implement structured activities in which students without disabilities have a chance to use, practice, and implement new practical knowledge in real-life applications. Such activities should be established in both the context of the school with students with disabilities, as well as in the community through joint (working alongside those with disabilities) service learning projects. The

146

ultimate goal would be promote empathetic understanding (Colwell, Thompson, & Berke, 2001).

A second thread that emerged through all four studies with implications for occupational therapy practice is the need for collaboration among members of the school team, in order to demonstrate a level of commitment and shared vision essential for success (Leigers, Kleinert, & Carter, 2017). Therapists report that collaboration is best practice, but they often do not use this approach (Kennedy & Steward, 2012). Fewer than half of occupational therapy practitioners indicated that they work with special education teachers (47.7%), general education teachers (42.3%), paraprofessionals (48.6%), and administrators (13.5%) (Leigers, Myers, & Schneck, 2016). Support is often needed from these team members in advocating and advancing issues of policy and procedure, gaining access to the natural contexts of students, and working with the larger school population to address the social context. Unfortunately, these team members often do not understand the role of the occupational therapist in addressing social participation and often see practitioners only addressing fine motor or sensory deficits (Argabrite-Grove, 2002). This is confounded by practitioners' reliance, in some cases, on a traditional pull-out service delivery model in which other professionals' understanding of the practice are minimized by not seeing what is being done. A push-in service delivery model will enable occupational therapy practitioners to showcase their skills, more readily contribute to RtI (response to intervention) practices and goal setting for students, and collaborate with a greater understanding of what is occurring in the classroom. By educating and showing the skills of occupational therapy practice, other professionals will be more apt to engage in collaborative efforts that address issues beyond fine motor and sensory.

Collaboration is also needed in order to design interventions and modify the physical and social environment for optimal learning and social engagement. Collaboration with teachers regarding how to incorporate students with disabilities into the routine and structure of the classroom, how to model inclusive attitudes and behaviors for student, and how to develop valued roles for all students is crucial to the success of students with disabilities. With paraprofessionals, occupational therapy practitioners should work to maximize the independence of students with disabilities, withdrawing the proximity of the paraprofessional to any individual students and shifting the paraprofessional's role to optimizing the physical and social environment on a day-to-day basis for enhanced learning. It is also vital that occupational therapy professionals work closely with speech language pathologists as they address the social participation of students with disabilities. Lack of communication between students with disability and their peers is a major barrier that needs to be addressed. Training all students, as well as adults in the social environment, on alternate methods of communication may be needed.

A third thread for consideration by occupational therapy practitioners throughout the research was the need to facilitate the membership of the student with disability in valued school roles. Current practices suggest that occupational therapy practitioners are most likely to adapt the classroom-based activity for increased interaction between students with and without disabilities (44.9%), but are less likely to adapt the physical environment to facilitate greater social interaction among students with and without disabilities (35.4%) or facilitate enrollment in clubs and sports for students with disabilities (3.6%) (Leigers, Myers, & Schneck, 2016). Increasing the opportunities for students with disabilities to make contributions to the classroom or school context instills

a sense of belonging, and facilitates initiation and independence. Connections made from social inclusion also leads to learning opportunities. Peers often provide natural consequences to social inappropriate actions, and social engagement both in and out of the classroom lead to teachable moments (Leigers, Kleinert & Carter, 2017).

Developing roles in the classroom for all students, including students with disabilities, communicates their membership in the class. Findings from study four illustrate the mixed messages that can be given by adults in the social context regarding the student's belonging and connectedness in the classroom. Previous research has found that, when students are not provided with a means by which to contribute to the class, students will create opportunities to be helped in order to receive attention (Richardson, 2002). Students with disabilities should also be ensured opportunities to contribute to class discussion, as well as opportunities to seek and give feedback. This is congruent with social-emotional learning programming based on the understanding that a context embedded within supportive relationships supports learning that is challenging, engaging, and meaningful (CASEL, 2012)

The fourth thread, structuring activities, calls for occupational therapy practitioners to modify and adapt activities so that all students are able to engage with and access the educational curriculum. Students with disabilities should be able to participate in multiple types of learning along with their peers. Multiple approaches are needed to reach multiple types of learners, and a combination of approaches is more effective than any single method (Favazza, 2000; Ison et al. 2010; Leigers & Myers, 2015). Furthermore, occupational therapy practitioners should work with general and special education teachers, and paraprofessionals to develop roles within activities that

149

allow students to engage in parallel, associative, and cooperative activities. This starts

with ensuring the presence of the student in the classroom, and that their presence is in

close proximity to their peers. Students with disabilities should have equal access to

classroom supplies, and that participation in group activities is seen as a natural process

of their membership in the class.

By structuring group activities that include students with and without disabilities,

knowledge regarding disability and diverse individuals is being communicated. Activities

need to be structured so that the student with the disability is a successful, contributing

member. Literature suggests that group activities "provide an excellent platform for

tapping into a child's natural curiosity about disability and are an opportunity to discuss

helping, acceptance, and friendship in a natural way as well as to model appropriate

social skills" (Richardson, Florey, & Greene, 2011, p. CE-5).

Research Directions

The multiple research methods employed in these studies provide information

regarding the social participation of students with disabilities from diverse sources (the

literature, team members, occupational therapists, and students). Using this as a base,

future research is needed to take a more comprehensive look at specific assessments and

intervention practices which could be utilized by occupational therapy practitioners in

addressing social participation of students with disabilities. One area, highlighted in study

1, is the importance of implementing Tier I interventions aimed at promoting positive

attitudes towards individuals with disabilities. This lines up with the academic curriculum

of learning about and respecting diverse individuals. Research is needed to understand 1)

the characteristics of an effective program, 2) the relationship between attitudes and

resulting behavior, and 3) the longitudinal effects of specific programs. Furthering

occupational therapy research in these areas will also provide support for practitioners

who seek to be further involved in designing and implementing system-wide changes.

Study 1 demonstrated, through a review of the literature, that programs of longer duration

tend to have a greater impact on promoting positive attitudes (Leigers & Myers, 2015).

However, other characteristics, such as age of the recipient, disability category,

geographic area, exposure to diverse others, teaching style and teaching materials are

likely to impact peer attitudes as well. Furthermore, changes in attitudes do not always

lead to changes in behavior. For example, no occupational therapy literature was found

that investigates if the intent to interact leads to one initiating interactions. If changes are

seen in tier one interventions in either attitude or behavior, research is needed to

determine if these are sustained over a period of time or if periodic updates are required.

Social network analysis, as seen in Study 4, would be an important tool in assessing the

longitudinal effects of a program, particularly those that hope to change the overall

structure and cohesion of a given group of students.

Occupational therapy practitioners currently report that social participation is

evaluated primarily through informal assessment (Leigers, Myers, & Schneck, 2016).

Future research should evaluate if current methods of formal assessment are meeting the

needs of occupational therapy practitioners and the students that they serve. This

dissertation shows that social network analysis provides useful information in

understanding the social context, and that this combined with observation and other

functional performance tools could be valuable in designing an effective method for use

in school-based practice. Designing such an instrument, and testing its validity and

reliability, would be an important step for research in social participation. In addition to assessments, occupational therapy practitioners would benefit from carefully prepared guidelines that utilize information gained from this dissertation. Development of these guidelines should take into consideration the various factors that impact social participation intervention.

Finally, changes in occupational therapy practitioners' perceived competency, as well as current trends in practices related to service-delivery and interventions for social participation should continue to be monitored as the profession makes changes to its educational program, most notably its requirement that one of its fieldwork placements address psychosocial factors. Further investigation as to what serves to facilitate or hinder the occupational therapy practitioner from implementing changes to address social participation for the student with disabilities is also needed.

Conclusions

Great strides have been made in inclusionary practices over the past four decades as greater number of students with disabilities are being placed in general education classrooms, which provides for opportunities for socialization and increased participation with peers without disabilities. However, being in a general education classroom by itself does not lead to relationships with peers, feelings of acceptance or active engagement in learning activities. The literature is clear that students with disabilities have lower social status than their peers (Cambra & Silvestre, 2003), and that students are not seen as equal members of the class (Richardson, 2002). Forming relations with peers is necessary as it improves a student's sense of safety, belonging, and learning (Bourke & Burgman, 2010; McMaugh, 2011).

It is important that occupational therapy practitioners understand their role in addressing this area of a student's well-being, and connectedness, as it relates to school-based practice, and understand how their skills and expertise can contribute to the team approach. This dissertation includes four different, but related, studies that examine social participation with an overall aim of identifying how occupational therapy practitioners can facilitate and support the social participation of all students with specific consideration given to those students with disabilities. Occupational therapy practitioners can utilize the presented information to provide services to students with disabilities, and be a leader within school systems to design and implement programming that addresses the well-being of all students.

Table 1: Implication for Practice Across Research

Provision of Practical Knowledge

1. Design and implement Tier I and Tier II interventions aimed at promoting understanding and acceptance of individuals with diverse abilities.
2. Assess and address the social environment by providing context-specific instructions utilizing an emotional-behavioral approach.
3. Promote emphatic understanding through multi-method instructional techniques.
4. Facilitate structured activities and service learning projects in and out of school where students with and without disabilities participate together.
5. Create a safe environment where all students can seek judgment-free advice and answers.
6. Incorporate sustained and reiterated message of inclusion and acceptance into curriculum.

Collaboration

1. Develop a shared vision related to inclusion among professionals within school context.
2. Utilize evidence-based best practice methods of service delivery in the classroom to demonstrate the skills of the occupational therapy profession.
3. Define team members' roles as part of the social context of the student with disability, including the role of the peer. This may vary depending on attributes of the student.
4. Build regularly scheduled collaboration periods into the schedule so that collaboration is an intentional process in which all members feel respected.
5. Collaborate on IEP goals, and progress reports to de-emphasize discipline-specific objectives in favor of a team approach.
6. Be intentional in including parents/caregivers, and administrators in collaboration.
7. Educate key players (e.g. teachers, administrator, paraprofessionals, support staff) of the role of occupational therapy practitioners in addressing social participation.
8. Utilize participation-based, occupation-centered evaluation tools.

Facilitation of Valued School Roles

1. Adapt the physical environment. This includes looking at proximity to peers across settings, ensuring students have access to "hubs" of social activity, and providing accommodations/modifications as needed for extracurricular activities.
2. Facilitate membership of students with disabilities on clubs, teams, and sports (including those that meet after school).
3. Define classroom student roles so that students with disabilities can contribute to the classroom routine.
4. Implement group interventions within the classroom setting to promote social participation within the learning environment.
5. Increase focus on social participation during times of transitions.
6. Identify key player in student's social network to build relations and stabilize roles.
7. Ensure opportunities to contribute to class discussion, seek feedback, and give feedback.

Table 1 (Continued)

Structured Activities

1. Teach social skills in small groups, in natural contexts as appropriate, followed by daily monitoring of interactions across settings.
2. Adapt classroom-based activities so that students with disabilities are able to participate with peers on parallel, associative, and cooperative activities.
3. Engage in purposeful scheduling by providing input to guidance counselor on classrooms most appropriate for inclusion based off of students social network and their interests.
4. Ensure the presence of the student in the classroom, and facilitate proximity to peers.
5. Provide skilled services in all context areas including classrooms, playground, cafeteria, hallways, library, break areas, extracurricular activities, etc.

Appendix A: Survey of Occupational Therapy Practitioners (Study 2)

1. I am currently an:
   - ☐ Occupational therapist in school based practice (OT)
   - ☐ Occupational therapy assistant in school based practice (OTA)
   - ☐ Other (If checked "other", you are finished with this survey. Please return in the self-enclosed stamped envelope. Thank you for your time and willingness to complete this survey!)

> For the following questions, **social participation** is defined as *an intentional interaction involving two or more individuals centered around any mutually agreed upon activity.*

1 = Never   2 = Rarely   3 = Sometimes   4 = Often   5 = Almost Always   6 = Always
 Please check "Not Applicable" if you have never served students within that disability category. How often do you address the social participation of students with disabilities in formal evaluations (e.g. social profile, PEM-CY, etc.)? (OTAs, please consider your role in gathering evaluation data).

	Never--------------------------------Always						Not Applicable (x)
2. Deaf and blindness	1	2	3	4	5	6	
3. Deafness	1	2	3	4	5	6	
4. Developmental Delay	1	2	3	4	5	6	
5. Emotional Disturbance	1	2	3	4	5	6	
6. Hearing Impairment	1	2	3	4	5	6	
7. Intellectual Disability	1	2	3	4	5	6	
8. Multiple Disabilities	1	2	3	4	5	6	
9. Orthopedic Impairment	1	2	3	4	5	6	
10. Other Health Impairment	1	2	3	4	5	6	
11. Specific Learning Disability	1	2	3	4	5	6	
12. Speech/Language Impairment	1	2	3	4	5	6	
13. Traumatic Brain Injury	1	2	3	4	5	6	
14. Visual Impairment, including blindness	1	2	3	4	5	6	

1 = Never   2 = Rarely   3 = Sometimes   4 = Often   5 = Almost Always   6 = Always

Please check "Not Applicable" if you have never served students within that disability category. How often do you address the social participation of students with disabilities in <u>informal evaluations</u> (e.g. through teacher interview, observations, etc.)? (OTAs, please consider your role in gathering evaluation data).

	Never--------------------------------Always						Not Applicable (x)
15. Deaf and blindness	1	2	3	4	5	6	
16. Deafness	1	2	3	4	5	6	
17. Developmental Delay	1	2	3	4	5	6	
18. Emotional Disturbance	1	2	3	4	5	6	
19. Hearing Impairment	1	2	3	4	5	6	
20. Intellectual Disability	1	2	3	4	5	6	
21. Multiple Disabilities	1	2	3	4	5	6	
22. Orthopedic Impairment	1	2	3	4	5	6	
23. Other Health Impairment	1	2	3	4	5	6	
24. Specific Learning Disability	1	2	3	4	5	6	
25. Speech/Language Impairment	1	2	3	4	5	6	
26. Traumatic Brain Injury	1	2	3	4	5	6	
27. Visual Impairment, including blindness	1	2	3	4	5	6	

1 = Never   2 = Rarely   3 = Sometimes   4 = Often   5 = Almost Always   6 = Always

Please check "Not Applicable" if you have never served students within that disability category. How often do you address the social participation of students with disabilities in your <u>interventions?</u>

	Never--------------------------Always						Not Applicable (x)
28. Deaf and blindness	1	2	3	4	5	6	
29. Deafness	1	2	3	4	5	6	
30. Developmental Delay	1	2	3	4	5	6	
31. Emotional Disturbance	1	2	3	4	5	6	
32. Hearing Impairment	1	2	3	4	5	6	
33. Intellectual Disability	1	2	3	4	5	6	
34. Multiple Disabilities	1	2	3	4	5	6	
35. Orthopedic Impairment	1	2	3	4	5	6	
36. Other Health Impairment	1	2	3	4	5	6	
37. Specific Learning Disability	1	2	3	4	5	6	
38. Speech/Language Impairment	1	2	3	4	5	6	
39. Traumatic Brain Injury	1	2	3	4	5	6	
40. Visual Impairment, including blindness	1	2	3	4	5	6	

1 = Never   2 = Rarely   3 = Sometimes   4 = Often   5 = Almost Always   6 = Always
Please check "Not Applicable" if you have never served students within that disability category.

How often do you address the social participation of students with disabilities in your discharge planning/discharge recommendations?

	Never----------------------------------Always						Not Applicable (x)
41. Deaf and blindness	1	2	3	4	5	6	
42. Deafness	1	2	3	4	5	6	
43. Developmental Delay	1	2	3	4	5	6	
44. Emotional Disturbance	1	2	3	4	5	6	
45. Hearing Impairment	1	2	3	4	5	6	
46. Intellectual Disability	1	2	3	4	5	6	
47. Multiple Disabilities	1	2	3	4	5	6	
48. Orthopedic Impairment	1	2	3	4	5	6	
49. Other Health Impairment	1	2	3	4	5	6	
50. Specific Learning Disability	1	2	3	4	5	6	
51. Speech/Language Impairment	1	2	3	4	5	6	
52. Traumatic Brain Injury	1	2	3	4	5	6	
53. Visual Impairment, including blindness	1	2	3	4	5	6	

1 = Never   2 = Rarely   3 = Sometimes   4 = Often   5 = Almost Always   6 = Always
Please check "Not Applicable" if you have never served students within these grade levels.

How often do you address the social participation throughout the therapy process (evaluation, intervention, discharge) for the following grade levels?

	Never----------------------------------Always						Not Applicable (x)
54. Primary (PK – 2nd)	1	2	3	4	5	6	
55. Elementary (3rd – 5th)	1	2	3	4	5	6	
56. Middle School (6th – 8th)	1	2	3	4	5	6	
57. High School (9th – 12th)	1	2	3	4	5	6	

1 = Never   2 = Rarely   3 = Sometimes   4 = Often   5 = Almost Always   6 = Always

I target the area of social participation in students with disabilities by working with:

	Never----------------------------------Always					
58. The student with the disability	1	2	3	4	5	6
59. Peers in the student's general education classroom	1	2	3	4	5	6
60. Peers in the student's special education classroom	1	2	3	4	5	6
61. Special Education Instructors	1	2	3	4	5	6
62. General Education Instructors	1	2	3	4	5	6
63. School administrators	1	2	3	4	5	6
64. Paraprofessionals	1	2	3	4	5	6
65. Parents/caregivers	1	2	3	4	5	6
66. Guidance counselor	1	2	3	4	5	6
67. Speech language pathologist	1	2	3	4	5	6
68. Physical therapy practitioner (PT/PTA)	1	2	3	4	5	6
69. Adapted Physical Education Instructors	1	2	3	4	5	6
70. Resource Teachers (music, art, gym, etc.)	1	2	3	4	5	6
71. Support staff (cafeteria workers, playground attendants, hall monitor, bus drivers, etc.)	1	2	3	4	5	6
72. Other (please indicate):	1	2	3	4	5	6

1 = Never　　2 = Rarely　　3 = Sometimes　　4 = Often　　5 = Almost Always　　6 = Always
When addressing the social participation of students with disabilities, I:

Never----------------------------------Always

	1	2	3	4	5	6
73. Develop interventions focusing on internal client factors (e.g. making eye contact, appropriate touch, etc.)	1	2	3	4	5	6
74. Address attitudes and behaviors of peers without disabilities in the student's social environment	1	2	3	4	5	6
75. Address attitudes and behaviors of adults in the student's social environment	1	2	3	4	5	6
76. Organize social groups (e.g. Lunch Bunch) that include students with and without disabilities	1	2	3	4	5	6
77. Facilitate enrollment in clubs and sports for students with disabilities	1	2	3	4	5	6
78. Work on social skills needed for early childhood transitions (e.g. sharing)	1	2	3	4	5	6
79. Work on social skills needed for post school transitions (e.g. interview skills)	1	2	3	4	5	6
80. Adapt activities for increased involvement of students with disabilities in group classroom-based activities with peers	1	2	3	4	5	6
81. Adapt the physical environment to allow for greater social interaction among students with and without disabilities	1	2	3	4	5	6
82. Advocate for changes in policy and procedures that would promote social participation among students with and without disabilities	1	2	3	4	5	6
83. Other (please indicate):	1	2	3	4	5	6

1 = Never　　2 = Rarely　　3 = Sometimes　　4 = Often　　5 = Almost Always　　6 = Always
To what extent do you agree with the following statements?

Never--------------------------------Always

	1	2	3	4	5	6
84. I understand my role in addressing social participation of students with disabilities in school based practice.	1	2	3	4	5	6
85. I have experience in addressing the social participation of students with disabilities in school based practice.	1	2	3	4	5	6
86. I believe that my understanding, experience, and training have allowed me to be competent in my ability to address the social participation of students with disabilities.	1	2	3	4	5	6
87. I would like to gain a greater understanding and/or ability to address issues of social participation in students with disabilities.	1	2	3	4	5	6

1 = Never   2 = Rarely   3 = Sometimes   4 = Often   5 = Almost Always   6 = Always

When addressing the social participation, indicate the frequency with which you use the following service delivery models. Definitions of terms are provided below each prompt.

Never--------------------------------Always

88. Direct, pull out	1	2	3	4	5	6
Direct, pull out: Student is removed from classroom activity receiving services through a one-on-one model. Examples include student being seen in a therapy room or student is seen in the back of the class but is no longer engaged in the current classroom task.						
89. Direct, classroom integrated	1	2	3	4	5	6
Direct, classroom integrated: Student is seen in the classroom and continues to engage in current classroom activities but is provided skilled service one-on-one.						
90. Group intervention	1	2	3	4	5	6
Group intervention: Student is seen with a group of other students also receiving occupational therapy services. This can be done in the classroom or utilizing a pull-out model, but does not include groups done as part of Response to Intervention.						
91. Services "on behalf" (IDEIA) of students	1	2	3	4	5	6
Services "on behalf" (IDEIA) of students: Services that are conducted to the benefit of an individual student but that occur outside direct interventions. Examples would include collaboration and consultation with other professionals.						
92. Program supports	1	2	3	4	5	6
Program supports: Services provided to the school that provide measures to increase the educational attainment of a larger set of students. Examples would include changes to policy and procedures, or contributions to curriculum.						
93. Response to Intervention - Tier I (classroom)	1	2	3	4	5	6
Response to Intervention – Early identification and support of students not currently served by special education. Tier I (classroom) involves instruction and screening to all children in the classroom.						
94. Response to Intervention - Tier II (small group)	1	2	3	4	5	6
Response to Intervention - Early identification and support of students not currently served by special education. Tier II (small group) includes providing services to a select set of students to target an area of need.						
95. Response to Intervention - Tier III (intensive)	1	2	3	4	5	6
Response to Intervention – Early identification and support of students not currently served by special education. Tier III (intensive) involves providing one on one services to identify the effectiveness of select interventions.						
96. Co-treatment	1	2	3	4	5	6
Practitioners from at least 2 different professional disciplines address treatment goals while client is engaged in a single therapy session. An example would be the occupational therapy practitioner engaged with the physical therapist to address student's access to playground equipment for purposeful social play.						
97. Co-teaching	1	2	3	4	5	6
Co-teaching: Practitioners from at least two different professional disciplines address goals through classroom based instruction. This is commonly the occupational therapy practitioner with a special education teacher.						
98. Other (please indicate):	1	2	3	4	5	6

1 = Never   2 = Rarely   3 = Sometimes   4 = Often   5 = Almost Always   6 = Always

To what extent do you agree with the following: I have had training/education in addressing the social participation of students with disabilities in school based practice through:

	Never-----------------------------------Always					
99. College coursework (excluding fieldwork)	1	2	3	4	5	6
100. Level I fieldwork experiences	1	2	3	4	5	6
101. Level II fieldwork experiences	1	2	3	4	5	6
102. Professional courses	1	2	3	4	5	6
103. Mentorship	1	2	3	4	5	6
104. Independent readings of journals, or other peer reviewed sources	1	2	3	4	5	6
105. On the job training	1	2	3	4	5	6
106. Certifications	1	2	3	4	5	6
107. Other (please indicate):	1	2	3	4	5	6

108. I am considered to be:
- ☐ Full-time in school based practice
- ☐ Part-time in school based practice
- ☐ PRN or as-needed in school based practice

109. Of your school based practice employment, indicate percentages   of how you are   currently employed:

Direct employment by the public school district	%
Employed as private contractor	%
Employed through private agency	%
Employed by specialized (non-district) school	%
Other (please indicate)	%
Total Percentage:	100 %

110. Highest Degree or Credential Obtained:
- ☐ Associate degree
- ☐ Bachelor's degree
- ☐ Post-Bachelorette certificate
- ☐ Master's degree
- ☐ Educational Specialist degree
- ☐ Doctorate

111.   Please indicate number of years working

As an OT or OTA	
With children or youth as an OT or OTA	
In school systems as an OT or OTA	

Thank you for your time and your willingness to participate!

Appendix B: Interview Guide for Phenomenological Study

Opening
1) What is your job title and what do you see as your primary job responsibilities?
2) What do you perceive is your role in working with students with disabilities?
3) What is your own vision for your school in terms of inclusion and peer relationships for students with disabilities?

Efficacy of pilot site training
1) Describe for me why your team decide to apply to become a pilot site?
2) Describe for me the makeup of your team that attended the pilot site training.
3) Describe for me what you gained through the pilot site training.
4) What did you see as being the most important concept or piece of information that you learned through the training?
5) What do you wish the pilot site training would have addressed but didn't
6) Describe for me the goals and objectives that your team developed through the training session. Do these continue to be the same goals that you worked on throughout this past academic year?
7) What were the locations (e.g., classroom, cafeteria, hallway, etc.) that your school saw as an area of need for furthering peer interactions? Why were these areas identified?

Implementation
1) Describe for me how the school or those in the school have adapted the way in which services to students with disabilities are provided as a result of implementing peer supports or peer networks.
2) What assistance have you received from others (in school or in the community) in making these changes?
3) Describe for me how students with disabilities were prepared to work within a peer network or to provide peer supports.
4) Describe for me how peers were prepared to work within a peer support network.
5) What feedback have you received from students with disabilities and/or their peers regarding their participation?
6) Describe for me any feedback from outside sources (parents, administrators, other community members, teachers) on strategies that you have implemented since attending the training?
7) What has been most helpful to you in implementing peer networks and/or peer supports?
8) What was some of the barriers that you have faced in implementing peer networks and/or peer supports?

Outcomes
1) What do you see are the outcomes for the students with disabilities and/or their peer who are a part of peer networks and/or peer supports? Positive - Negative.

2) Describe for me how the social interactions between students with disabilities and their peers have changed (if they have) since implementing peer networks and/or peer supports?
3) Please give me a specific example (I don't need names) in which implementation of strategies was tried that would be considered a success story. Tried but did not end in success.
4) Describe for me how peer networks and/or peer supports have impacted friendships.
5) What impact, if any, do you perceive that peer networks and/or peer supports have on student learning?
6) What impact, if any, do you perceive that peer networks and/or peer supports have on the practice of inclusion?
7) Do you plan on sharing the outcomes of the Peer Support Network Project with the community/your community partners? If so, in what way? If not, why not?

Closing
1) Is there anything that you learned from the trainings that you have not implemented but plan to? What is necessary in order to implement the changes that you plan on making?
2) What is necessary for the changes that have already occurred to be sustainable? Has your team talked about issues of sustainability?
3) Is there any information that you would like to share with me that I have not covered?
4) Do you mind if I contact you again if I have clarifying or follow up questions?
5) Do you mind if I contact you again to share with you my overall results to make sure that what is found includes your perceptions?

Appendix C: Observation Guide for Feasibility Study

1. Sketch out the area under observation. Note the location of furniture, and other individuals in the room. Note their roles in the space. How does the space fit into the overall plan for the site's purpose? Is it casual or formal? What is the pace?

2. What are some observable social norms? What are the expectations for performance in this area? What are the expectations for performance from others in the room?

3. Describe the initiation of interactions – is it structured or spontaneous; who initiated it and for what purpose? Also record initiation of interactions that failed.

4. When describing interactions be sure to note the time (length) of interactions, a description of the interaction, and under what conditions did it occur. Remember to record other environmental sensory factors: smells, sounds, temperature, etc that may be found to be a factor. Observable attribute of the participant should also be recorded (e.g. gender)

5. What objects are being used in the interaction? How are they being used?

6. What methods of communication are being used? Describe non-verbal communication observed?

7. What is the relationship between those interacting? What roles do they each play?

8. Describe the discontinuation of interactions – who ended it and under what conditions did it end?

9. Note if the interactions are recurring, and if so, what keeps reconnecting the individuals.

10. Note any and describe any interruptions that occur to the interactions.

11. Note the number of interactions that occur within a particular space and time, as well as time between interactions.

12. Describe opportunities for interactions that did not occur. What prevented interactions from occurring?

References

Abbott, K. M., Bettger, J. P, Hampton, K. N., & Kohler, H. P. (2015). The feasibility of
measuring social networks among older adults in assisted living and dementia
special care units. *Dementia, 14*(2), 199-219.

Allport, G. W. (1954). The nature of prejudice. Cambridge/Reading, MA: Addison-
Wesley.

Altschuler, S. J., Mackelprang, R. W., & Baker, R. L. (2008). Youth with disabilities: A
standardized self-portrait of how they are faring. *Journal of Social Work in
Disability & Rehabilitation, 7*(1), 1-18.

American Occupational Therapy Association. (2004). Occupational therapy's
commitment to nondiscrimination and inclusion. *American Journal of
Occupational Therapy, 58*, 668.

American Occupational Therapy Association. (2012). 2011 Accreditation Council for
Occupational Therapy Education (ACOTE®) standards. *American Journal of
Occupational Therapy, 66*, S6–S74.

American Occupational Therapy Association. (2014). Occupational therapy practice
framework: Domain and process (3rd ed.). *American Journal of Occupational
Therapy, 68*(Suppl. 1), S1–S48.

Anaby, D., Hand, C., Bradley, L., DiRezze, B., Forhan, M., DiGiacomo, A., & Law, M.
(2013). The effect of the environment on participation of children and youth with
disabilities: a scoping review. *Disability and Rehabilitation, 35*(19), 1589-1598.

Argabrite-Grove, R. E. (2002). OT in the schools: Embracing our psychosocial roots. *OT
Practice, 7*(6), 21–25.

Ashburner, J., Rodger, S., Ziviani, J., & Jones, J. (2014). Occupational therapy services
for people with autism spectrum disorders: Current state of play, use of evidence
and future learning priorities. *Australian Occupational Therapy Journal, 61*, 110–
120.

Avramidis, E. (2010). Social relationships of pupils with special educational needs in the
mainstream primary class: Peer group membership and peer-assessed social
behaviour. *European Journal of Special Needs Education, 25*(4), 413-429.

Baker, C., Rude, H., Sasso, G., & Weishahn, M. (1994). Enhancing rural students'
attitudes toward peers with disabilities: A comparison of interventions. *Rural
Special Education Quarterly, 13*(2), 34 - 40.

Badley, E. M. (2008). Enhancing the conceptual clarity of the activity and participation
components of the International Classification of Functioning, Disability, and
Health. *Social Science & Medicine, 66*(11), 2335 - 2345.

Bagley, M.T., & Greene, J.F. (1981). *Peer attitudes toward handicapped scale*. Austin,
TX: Pro-Ed.

Baglieri, S., & Knopf, J. H. (2004). Normalizing Difference in Inclusive Teaching.
Journal of Learning Disabilities, 37, 525-529.

Beck, A., Barnes, K., Vogel, K., & Grice, K. O. (2006). The Dilemma of Psychosocial
Occupational Therapy in Public Schools. *Occupational Therapy in Mental
Health, 22*(1), 1-17. doi:10.1300/J004v22n01_01

Bedell, G., Khetani, M. A., Cousins, M. A., Coster, W. J., & Law, M. C. (2011). Parent
perspectives to inform development of measures of children's participation and
environment. *Archives of Physical Medicine and Rehabilitation, 92*(5), 765 - 773.

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

Bjorck-Akesson, E., Wilder, J., Granlund, M., Pless, M., Simeonsson, R., Adolfsson, M., . . . Lillvist, A. (2010). The International Classification of Functioning, Disability and Health and the version for children and youth as a tool in child habilitation/early childhood intervention--feasibility and usefulness as a common language and frame of reference for practice. *Disability and Rehabilitation, 31*(S1), S125-S138. doi:10.3109/09638288.2010.516787

Borgatti, S. P. (2002). *NetDraw Visualization Software*. Cambridge, MA: Analytical technologies.

Borgatti, S. P., Everett, M. G., & Johnson, J. C. (2013). Analyzing Social Networks. Thousand Oaks, CA: SAGE.

Borgatti, S. P., Everett, M. G., & Freeman, L. C. (2002). *UCINET for Windows: Software for Social Network Analysis.* Harvard, MA: Analytic Technologies.

Bossaert, G., Colpin, H., Pijl, S. J., & Petry, K. (2011). The attitudes of Belgian adolescents towards peers with disabilities. *Research in Developmental Disabilities, 32*(2), 504-509.

Bossaert, G., Colpin, H., Pijl, S. J., & Petry, K. (2013). Truly included? A literature study focusing on the social dimension of inclusion in education. *International Journal of Inclusive Education, 17*(1), 60-79. doi:10.1080/13603116.2011.580464

Bottema-Beutel, K., & Li, Z. (2015). Adolescent judgments and reasoning about the

    failure to include peers with social disabilities. *Journal of Autism and*

    Developmental Disorders, 45(6), 1873-1886.

Bourke, S., & Burgman, I. (2010). Coping with bullying in Australian schools: How

    children with disabilities experience support from friends, parents and teachers.

    Disability & Society, 25(3), 359-371.

Brandenburger-Shasby, S. (2005). School-based practice: Acquiring the knowledge and

    skills. *American Journal of Occupational Therapy, 59*(1), 88-96.

Brass, D.J. & Krackhardt, D.M (2012). Power, politics, and social networks in

    organizations. In G. R. Ferris and D.C. Treadway (eds.) *Politics in Organizations:*

    Theory and Research Considerations, pp. 355-375. New York & London:

    Routledge, Taylor and Francis Group.

Brinker, R.P., & Thorpe, M.E. (1986). Features of integrated educational ecologies that

    predict social behavior among severely mentally retarded and nonretarded

    students. *American Journal on Mental Retardation, 91*, 150-159.

Brock, M. E., & Carter, E. W. (2015). Efficacy of teachers training paraprofessionals to

    implement peer support arrangements. *Exceptional Children.* Advance online

    publication. doi: 10.1177/0014402915585564

Brooks, B. A., Floyd, F., Robins, D. L., & Chan, W. Y. (2015). Extracurricular activities

    and the development of social skills in children with intellectual and specific

    learning disabilities. *Journal of Intellectual Disability Research, 59*, 678-687.

Brown, L., Branston, M., Hamre-Nietupski, S., Johnson, F., Wilcox, B., & Gruenewald, L. (1979). A rationale for comprehensive longitudinal interactions between severely handicapped students and nonhandicapped students and other citizens. *AAESPH Review, 4,* 3-14.

Bunch, G., & Valeo, A. (2004). Student attitudes toward peers with disabilities in inclusive and special education schools. *Disability & Society, 19*(1), 61-76.

Cacioppo, J. T., Fowler, J. H., & Chistakis, N.A. (2009). Alone in the crowd: The structure and spread of loneliness in a large social network. *Journal of Personality and Social Psychology, 110*(5), 635-659.

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

Cambra, C., & Silvestre, N. (2003). Students with special educational needs in the inclusive classroom: Social integration and self-concept. *European Journal of Special Needs Education, 18*(2), 197-208.

Camden, C., Tétreault, S., & Swaine, B. (2012). Increasing the use of group interventions in a pediatric rehabilitation program: Perceptions of *administrators, therapists, and parents. Physical* and Occupational Therapy in Pediatrics, 32, 120–135.

Cameron, L., & Rutland, A. (2006). Extended contact through story reading in school: Reducing children's prejudice toward the disabled. *Journal of Social Issues, 62*(3), 469-488.

Cameron, L., Rutland, A., & Brown, R. (2007). Promoting children's positive intergroup attitudes towards stigmatized groups: Extended contact and multiple classification skills training. *International Journal of Behavioral Development, 31*(5), 454-466.

Campbell, J., Gilmore, L., & Cuskelly, M. (2003). Changing student teachers' attitudes towards disability and inclusion. *Journal of Intellectual and Developmental Disability, 28*(4), 369-379.

Carnine, D. (1997). Bridging the research-to-practice gap. *Exceptional Children, 63*, 513–521. doi: 10.1177/001440299706300406

Carter, E. W., Asmus, J., Moss, C. K., Amirault, K. A., Biggs, E. E., Bolt, D.,…Wier, K. (2015). Randomized evaluation of peer supports arrangements to support the inclusion of high school students with severe disabilities. *Exceptional Children.* Advance online publication. doi: 10.1177/0014402915598780

Carter, E. W., Asmus, J., Moss, C. K., Cooney, M., Weir, K., Vincent, L.,…Fesperman, E. (2013). Peer network strategies to foster social connections among adolescents with and without severe disabilities. *TEACHING Exceptional Children, 46*(2), 51-59.

Carter, E. W., Bottema-Beutel, K., & Brock, M. E. (2014). Social interactions and friendships. In M. Agran, F. Brown, C. Hughes, C. Quirk, & D. Ryndak (Eds.), *Equity and full participation for individuals with severe disabilities: A vision for the future* (pp. 197-216). Baltimore, MD: Paul H. Brookes.

Carter, E. W., Cushing, L. S., Clark, N., & Kennedy, C. (2005). Effects of peer support interventions on students' access to the general curriculum and social interactions. *Research and Practice for Persons with Severe Disabilities, 30*, 15-25.

Carter, E. W., Cushing, L. S., & Kennedy, C. H. (2009). *Peer support strategies: Improving all students' social lives and learning.* Baltimore, MD: Paul H. Brookes.

Carter, E. W., & Kennedy, C. H. (2006). Promoting access to the general curriculum using peer support strategies. *Research and Practice for Persons with Severe Disabilities, 31*, 284-292. doi: 10.1177/154079690603100402

Carter, E. W., Moss, C. K., Hoffman, A., Chung, Y., & Sisco, L. (2011). Efficacy and social validity of peer support arrangements for adolescents with disabilities. *Council for Exceptional Children, 78*(1), 107 - 125.

Carter, E. W., Sisco, L., Melekoglu, M. A., & Kurkowski, C. (2007). Peer supports as an alternative to individually assigned paraprofessionals in inclusive high school classrooms. *Research and Practice for Persons with Severe Disabilities, 32*, 213-227.

Carter, E. W., Swedeen, B., Kurkowski, C. (2008). Friendship matters: Fostering social relationships in secondary schools. *TASH Connections, 34*(6), 9-14.

Case-Smith, J. (1994). Defining the specialization of pediatric occupational therapy. *American Journal of Occupational Therapy, 48*, 791–802.

Case-Smith, J., & Arbesman, M. (2008). Evidence-based review of interventions for autism used in or of relevance to occupational therapy. *American Journal of Occupational Therapy, 62*, 416–429.

Centola, D. & Macy, M. (2007). Complex contagions and the weakness of long ties. *American Journal of Sociology, 113*, 702-734.

Chamberlain, B., Kasari, C., & Rotheram-Fuller, E. (2007). Involvement or isolation? The social networks of children with autism in regular classrooms. *Journal of Autism and Developmental Disorders, 37*(2), 230-242.

Chudyk, A.M., Jutai, J.W., Petrella, R.J., & Speechley, M. (2009). Systematic review of hip fracture rehabilitation practices in the elderly. *Archives of Physical Medicine and Rehabilitation, 90*(2), 246-262.

Clunies-Ross, G., & O'Meara, K. (1989). Changing the attitudes of students towards peers with disabilities. *Australian Psychologist, 24*(2), 273 - 284.

Collaborative for Academic, Social, and Emotional Learning. (2012). *CASEL program guides: Effective social and emotional learning programs.* Retrieved from http://www.casel.org/guide/

Colwell, C. M. (1988). Effects of information on elementary band students' attitudes toward individuals with special needs. *Journal of Music Therapy, 35*(1), 19 - 33.

Colwell C. M., Thompson L. K., Berke M. (2001). Disability simulations and information: Techniques for modifying the attitudes of elementary school music students. *Journal of Music Therapy, 38*, 321-341.

Copeland, S. R., Hughes, C., Carter, E. W., Guth, C., Presley, J. A., Williams, C. R., & Fowler, S. A. (2004). Increasing access to general education: Perspectives of participants in a high school peer support program. *Remedial and Special Education, 25*(6), 342-352.

Cosbey, J., Johnston, S. S., & Dunn, M. L. (2010). Sensory processing disorders and social participation. *American Journal of Occupational Therapy, 64*, 462–473.

Coster, W., Law, M., Bedell, G., Liljenquist, K., Kao, Y. C., Khetani, M., & Teplicky, R. (2013). School participation, supports and barriers of students with and without disabilities. *Child: Care, Health and Development, 39*(4), 535-543.

Cramm, H., Aiken, A. B., & Stewart, D. (2012). Perspectives on the International Classification of Functioning, Disability, and Health: Child and Youth version (ICF-CY) and occupational therapy practice. *Physical & Occupational Therapy in Pediatrics, 32*(4), 388-403. doi:10.3109/01942638.2012.680009

Creswell, J. W. (2013). Qualitative inquiry and research design: Choosing among five approaches (3rd ed.). Los Angeles, CA: Sage.

Creswell, J. & Miller, D. (2000). Determining validity in qualitative inquiry. *Theory Into Practice, 39(3), 124-130.*

Copeland, S. R., Hughes, C., Carter, E. W., Guth, C., Presley, J., Williams, C. R., & Fowler, S. E. (2004). Increasing access to general education: Perspectives of participants in a high school peer support program. *Remedial and Special Education, 26*, 342-352.

Cushing, L.S., & Kennedy, C.H. (1997). Academic effects of providing peer support in general education classrooms on students without disabilities. *Journal of Applied Behavior Analysis, 30*, 139–151.

DeLay, D., Zhang, L., Hanish, L., Miller, C., Fabes, R., Martin, C., … Updegraff, K. (2016). Peer influence on academic performance: A social network analysis of social-emotional intervention effects. *Prevention Science, 17*(8), 903-913.

Del Valle, J. F., Bravo, A., & Lopez, M. (2010). Parents and peers as providers of support
in adolescents' social network: A developmental perspective. *Journal of
Community Psychology, 38,* 16-27. doi: 10.1002/jcop.20348

de Róiste, A., Kelly, C., Molcho, M., Gavin, A., & Gabhainn, S. N. (2012). Is school
participation good for children? Associations with health and wellbeing. *Health
Education, 112*(2), 88-104. doi:10.1108/09654281211203394

Diamond, K. E., & Tu, H. (2009). Relations between classroom context, physical
disability and preschool children's inclusion decisions. *Journal of Applied
Developmental Psychology, 30*, 75-81.

DiGennaro Reed, F., McIntyre, L., Dusek, J., & Quintero, N. (2011). Preliminary
assessment of friendship, problem behavior, and social adjustment in children
with disabilities in an inclusive education setting. *Journal of Developmental and
Physical Disabilities, 23,* 477–489. http://dx.doi.org/10.1007/s10882-011-9236-2

Dillman, D. A., Smyth, J. D., & Christian, L. M. (2009). Mail and internet surveys: The
tailored design method (3rd ed.). New York: John Wiley and Sons.

Donaldson, R. M., Helmstetter, E., Donaldson, J., & West, R. (1994). Influencing high
school students' attitudes toward and interactions with peers with disabilities.
Social Education, 58(4), 233 - 237.

Downs, S.H., & Black, N. (1998). The feasibility of creating a checklist for the
assessment of the methodological quality both of randomized and non-
randomized studies of health care interventions. *Journal of Epidemiology
Community Health, 52,* 377-384.

Dunn, W., Brown, C., & McGuigan, A. (1994). The ecology of human performance: A

    framework for considering the effect of context. *The American Journal of*

    Occupational Therapy, 48(7), 595-607.

Edwards, T. C., Patrick, D. L., & Topolski, T. D. (2003). Quality of life of adolescents

    with perceived disabilities. *Journal of Pediatric Psychology, 28*(4), 233-241.

Ekornas, B., Heimann, M., Tjus, T., Heyerdahl, S., & Lundervold, A. J. (2011). Primary

    school children's peer relationships: Discrepancies in self-perceived social

    acceptance in children with emotional or behavioral disorders. *Journal of Social*

    and Clinical Psychology, 30(6), 570 – 582.

Ellerton, M., & Turner, C. (1992). "Back to school" - An evaluation of a re-entry

    program for school-aged children with cancer. *Canadian Oncology Nursing*

    Journal, 2, 8 - 11.

Engel-Yeger, B., & Hamed-Daher, S. (2013). Comparing participation in out of school

    activities between children with visual impairments, children with hearing

    impairments and typical peers. *Research in Developmental Disabilities, 34*, 3124–

    3132.

Eriksson, M. (2011). Social capital and health - Implications for health promotion. *Global*

    Health Action, 4, 5611-5621.

Estell, D. B., Jones, M. H., Pearl, R., Van Acker, R., Farmer, T. W., & Rodkin, P. C.

    (2008). Peer groups, popularity, and social preference: Trajectories of social

    functioning among students with and without learning disabilities. *Journal of*

    Learning Disabilities, 41, 5–14.

Evans, I. M., & Meyer, L. H. (2001). Having friends and Rett syndrome: How social

    relationships create meaningful contexts for limited skills. *Disability and*

    Rehabilitation, 23(3/4), 167 - 176.

Everett, M. G., & Borgatti, S. P. (2012). Categorical attribute based centrality: E-I and G-

    F Centrality. Social Network, 34(4), 562-569.

Every Student Succeeds Act, Pub 114th Congress S. 1177. (2015).

Favazza, P. C., & Odom, S. L. (1997). Promoting positive attitudes of kindergarten-age

    children toward people with disabilities. *Exceptional Children, 63*, 405-418.

Favazza, P.C., Phillipsen, L., & Kumar, P. (2000). Measuring and promoting acceptance

    of young children with disabilities. *Exceptional Children, 53*, 224 - 229.

Feldman, R., Carter, E. W., Asmus, J., & Brock, M. E. (2015). Presence, proximity, and

    peer interactions of adolescents with severe disabilities in general education

    classrooms. *Exceptional Children, 82*(2), 192 - 208.

Fenty, N. S., Miller, M. A., & Lampi, A. (2008). Embed social skills instruction in

    inclusive settings. *Intervention in School & Clinic, 43*, 186-192.

Fiedler, C.R., & Simpson, R.L. (1987). Modifying attitudes of nonhandicapped high

    school students toward handicapped peers. *Exceptional Children, 53*, 342-349.

Fossey, E., & Scanlan, J. N. (2014). 2020 vision: Promoting participation, mental health

    and wellbeing through occupational therapy - what are we doing and where are

    we heading? *Australian Occupational Therapy Journal, 61*(4), 213-214.

Gannon, S., & McGilloway, S. (2009). Children's attitudes toward their peers with Down

    Syndrome in schools in rural Ireland: An exploratory study. *European Journal of*

    Special Needs Education, 24, 455-463.

Garcia, A. F., Diaz, A. L. A., & Rodriguez, M. A. A. (2009). A review and analysis of

   programmes promoting changes in attitudes towards people with disabilities.

   Annularly of Clinical and Health Psychology, 5, 81-94.

Gardner, K., Carter, E. W., Gustafson, J. R., Hochman, J. M., Harvey, M. N., Mullins, T.

   S., & Fan, H. (2014). Effects of peer networks on the social interactions of high

   school students with autism spectrum disorders. *Research and Practice for*

   Persons with Severe Disabilities, 39, 100-118.

Gerich, J. (2013). Effects of social networks on health from a stress theoretical

   perspective. *Social Indicators Research, 118*(1), 349-364.

Gilfoyle, E., & Gliner, J. A. (1985). Attitudes toward handicapped children: Impact of an

   educational program. *Physical & Occupational Therapy in Pediatrics, 5*, 27-41.

Goldstein, H., Kaczmarek, L., Pennington, R., & Shafer, K. (1992). Peer-mediated

   intervention: Attending to commenting on, and acknowledging the behavior of

   preschoolers with autism. *Journal of Applied Behavior Analysis, 225*(2), 289-305.

Godeau, E., Vignes, C., Sentenac, M., Ehlinger, V., Navarro, F., Grandjean, H., &

   Arnaud, C. (2010). Improving attitudes towards children with disabilities in a

   school context: A cluster randomized intervention study. *Developmental*

   Medicine and Child Neurology, 52(10), 236-242.

Goodenow, C. (1993. The psychological sense of school membership among adolescents:

   Scale development and educational correlates. *Psychology in the Schools, 30*(1),

   79-90.

Gould, R.V., & Fernandez, R.M. (1989). Structures of mediation: A formal approach o

   brokerage in transaction networks. *Sociological Methodology,* 89-126.

177

Grover, S. (2004). Why won't they listen to us? On giving power and voice to children participating in social research. *Childhood, 11*(1), 81 - 93.

Guldbrandsson, K., Nordvik, M. K., & Bremberg, S. (2012). Identification of potential opinion leaders in child health promotion in Sweden using network analysis. *BMC Research Notes, 5*(424), 1–4.

Han, K. G., & Chadsey, J. G. (2004). The influence of gender patterns and grade level on friendship expectations of middle school students towards peers with severe disabilities. *Focus on Autism and Other Developmental Disabilities, 19*, 205-214.

Hemmingsson, H., & Borell, L. (2002). Environmental barriers in mainstream school. *Child: Care, Health & Development, 28*(1), 57-63.

Hochman, J. M., Carter, E. W., Bottema-Beutel, K, Harvey, M. N., & Gustafson, J. R. (2015). Efficacy of peer networks to increase social connections among high school students with and without autism. *Exceptional Children, 82*, 96-116.

Hooper P.L., Jutai J.W., Strong J.G., & Russell-Minda E. (2008) Age-related macular degeneration and low vision rehabilitation: A systematic review. *Canadian Journal of Ophthalmology, 43*(2):180-187.

Hutzler, Y., Fliess-Douer, O., Avraham, A., Reiter, S., & Talmor, R. (2007). Effects of short-term awareness interventions on children's attitudes toward peers with a disability. *International Journal of Rehabilitation Research, 30*(2), 159 - 161.

Huang, Y., Peyton, C., Hoffman, M., & Pascua, M. (2011). Teacher perspectives on collaboration with occupational therapists in inclusive classrooms: A pilot study. *Journal of Occupational Therapy, Schools, and Early Intervention, 4*, 71–89.

Human Development Institute. (2015). *Kentucky Peer Support Network Project.* Retrieved from www.kypeersupport.org.

Humphrey, N., & Symes, W. (2010). Perceptions of social support and experience of bullying among pupils with autistic spectrum disorders in mainstream secondary schools. *European Journal of Special Needs Education, 25*(1), 77-91.

Individuals With Disabilities Education Act, Pub. L. 108–446, 118 Stat. 2647 (2004).

Ison, N., McIntyre, S., Rothery, S., Smithers-Sheedy, H., Goldsmith, S., Parsonage, S., & Foy, L. (2010). 'Just like you': a disability awareness programme for children that enhanced knowledge, attitudes and acceptance: pilot study findings. *Developmental Neurorehabilitation, 13*(5), 360-368.

Kasari, C., Rotheram-Fuller, E., Locke, J., & Gulsrud, A. (2012). Making the connection: randomized controlled trial of social skills at school for children with autism spectrum disorders. *Journal of Child Psychological Psychiatry, 53*(4), 431-439.

Kauffman, N. A., & Kinnealey, M. (2015). Comprehensive social skills taxonomy: Development and application. *American Journal of Occupational Therapy, 69*, PubMed http://dx.doi.org/10.5014/ajot.2015.013151

Kemp, C., & Carter, M. (2002). The social skills and social status of mainstreamed students with intellectual disabilities. *Educational Psychology, 22*(4), 391 - 411.

Kena, G., Musu-Gillette, L., Robinson, J., Wang, X., Rathbun, A., Zhang, J., . . . Dunlop Velez, E. (2015). The condition of education 2015 (NCES 2015 - 144). Washington, DC: National Center for Education Statistics Retrieved from http://nces.ed.gov/pubsearch.

Kennedy, C.H., Shukla, S., & Fryxell, D. (1997). Comparing the effects of educational

    placement on the social relationships of intermediate school students with severe

    disabilities. Exceptional Children, 64, 31-47.

Kennedy, S., & Stewart, H. (2012). Collaboration with teachers: A survey of South

    Australian occupational therapists' perceptions and experiences. *Australian*

    Occupational Therapy Journal, 59, 147–155.

Kim, J. W., Kim, B. N., Kim, J. I., Lee, Y. S., Min, K. J., & Kim, H. J., et al. (2015).

    Social network analysis reveals the negative effects of attention-

    deficit/hyperactivity disorder (ADHD) symptoms on friend-based student

    networks. *PLoS ONE, 10*(11): e0142782. Doi: 10.1371/journal.phone.0142782.

Kleinert, H., Miracle, S., & Sheppard-Jones, K. (2007a). Including students with

    moderate and severe intellectual disabilities in school extracurricular and

    community recreation activities. *Intellectual and Developmental Disabilities, 45*,

    46–55.

Kleinert, H., Miracle, S., & Sheppard-Jones, K. (2007b). Including students with

    moderate and severe disabilities in extracurricular and community recreation

    activities: Steps to success! *Teaching Exceptional Children, 39* (6), 33-38.

Kleinert, H., Towles-Reeves, E., Quenemoen, R., Thurlow, M., Fluegge, L., Weseman,

    L., & Kerbel, A. (2015). Where students with the most significant cognitive

    disabilities are taught: Implications for general curriculum access. *Exceptional*

    Children, 83(3), 312-328.

Klima, T., & Repetti, R. L. (2008). Children's peer relations and their psychological

    adjustment. *Merrill-Palmer Quarterly, 54*(2), 151-178.

Koster, M., Nakken, H., Pijl, S. J., & Van Houten, E. (2009). Being part of the peer
group: A literature study focusing on the social dimension of inclusion in
education. *International Journal of Inclusive Education, 13*(2), 117-140.

Koutsogeorgou, E., Leonardi, M., Bickenbach, J. E., Cerniauskaite, M., Quintas, R., &
Raggi, A. (2014). Social capital, disability, and usefulness of the International
Classification of Functioning, Disability and Health for the development and
monitoring of policy interventions. *Disability and Society, 29*(7), 1104-1116.

Krackhardt, D., & Stern, R. N. (1988). Informal networks and organizational crises: an
experimental simulation. *Social Psychology Quarterly, 51*(2), 123-140.

Kramer, J. M., Olsen, S., Mermelstein, M., Balcells, A., & Liljenquist, K. (2012). Youth
with disabilities' perspectives of the environment and participation: A qualitative
meta-synthesis. *Child: Care, Health & Development, 38*, 763-777.

Kreider, C. M., Bendixen, R. M., Mann, W. C., Young, M. E., and McCarty, C. (2015).
Mixed-method exploration of social network links to participation. *OTJR:
Occupation, Participation and Health, 35*(3), 151-159.

Laverdure, P. (2014). The development of expert practice in school-based occupational
therapy. *Journal of Occupational Therapy in Schools and Early Intervention, 73
(3-4), 225-234.*

Law, M. (2002). Participation in the occupations of everyday life. *American Journal of
Occupational Therapy, 56*, 640–649.

Law, M., Cooper, B., Strong, S., Stewart, D., Rigby, P., & Letts, L. (1996). The Person-
Environment-Occupation Model: A transactive approach to occupational
performance. *Canadian Journal of Occupational Therapy, 63*(1), 9-23.

Laws, G., Bates, G., Feuerstein, Mason-Apps, E., & White, C. (2012). Peer acceptance of

    children with language and communication impairments in a mainstream primary

    school: Associations with type of language difficulty, problem behaviours and a

    change in placement organization. *Child Language Teaching and Therapy, 28*,

    73-86.

Laws, G., & Kelly, E. (2005). The attitudes and friendship intentions of children in

    United Kingdom mainstream schools towards peers with physical or intellectual

    disabilities. *International Journal of Disability, Development and Education,*

    52(2), 79-99.

Layton, N. A., & Steel, E. J. (2015). "An environment built to include rather than exclude

    me": Creating inclusive environments for human well-being. *International*

    Journal of Environmental Research and Public Health, 12(9), 11146-11162.

Leigers, K. L., Kleinert, H., Carter, E. 'I never truly thought about them having friends':

    Equipping schools to foster peer relationships. *Rural Special Education*

    Quarterly. Accepted for publication.

Leigers, K. L., & Myers, C. T. (2015). Effect of duration of peer awareness education on

    attitudes toward students with disabilities: A systematic review. *Journal of*

    Occupational Therapy, Schools, & Early Intervention, 8(1), 79-96.

Leigers, K. L., Myers, C. T., & Schneck, C. (2016). Addressing social participation in the

    schools: A survey of occupational therapy practitioners. *American Journal of*

    Occupational Therapy, 70(5).

Levasseur, M., Richard, L., Gauvin, L., & Raymond, E. (2010). Inventory and analysis of definitions of social participation found in the aging literature: Proposed taxonomy of social activities. *Social Science & Medicine, 71*(12), 2141-2149.

Leyser, Y., Cumblad, C., & Strickman, D. (1986). Direct intervention to modify attitudes toward the handicapped by community volunteers: The learning about handicaps programme. *Educational Review, 38* (3), 229-236.

Lincoln Y. S. & Guba, E. G. (1985). Naturalistic Inquiry. Newbury Park, CA: Sage Publications.

Lindsay, S., & McPherson, A. C. (2012). Strategies for improving disability awareness and social inclusion of children and young people with cerebral palsy. *Child: Care, Health & Development, 38*, 809-816.

Lindsay, S., McPherson, A., Aslam, H., McKeever, P., & Wright, V. (2013). Exploring children's perceptions of two school-based social inclusion programs. A pilot study. *Child & Youth Care Forum, 42*, 1-18.

Little, L. M., Sideris, J., Ausderau, K., & Baranek, G. T. (2014). Activity participation among children with autism spectrum disorder. *The American Journal of Occupational Therapy, 68*, 177-185. doi: 10.1007/s10803-015-2460-3

Mankey, T. A. (2011). Occupational therapists' beliefs and involvement with secondary transition planning. *Physical and Occupational Therapy in Pediatrics, 31*, 345–358.

Marks, J. Barnett, L., Foulkes, C., Hawe, P., & Allender, S. (2013). Using social network analysis to identify key child care center staff for obesity prevention interventions: A pilot study. *Journal of Obesity*, doi: 10.1155/2013/919287.

Marom, M., Cohen, D., & Naon, D. (2007). 'Changing disability-related attitudes and self-efficacy of Israeli children via the Partners to Inclusion Programme'. *International Journal of Disability, Development, and Education, 54*, 113-127.

Martinez, R.S., & Carspecken, P. (2006). Effectiveness of a brief intervention on Latino children's social acceptance of peers with special needs. *Journal of Applied School Psychology, 23*(1), 97-115.

McDuff, S., Schultz, S., Andersson, E., & Pemberton, J. (2009). Meeting the psychosocial needs of the students in special education: An ethnographic study. *Journal of Occupational Therapy, Schools, & Early Intervention, 2*(3-4), 205 - 216. doi:10.1080/19411240903392897

McMaugh, A. (2011). En/countering disablement in school life in Australia: Children talk about peer relations and living with illness and disability. *Disability & Society, 26*(7), 853-866.

Michaels, C. A., & Orentlicher, M. L. (2004). The role of occupational therapy in providing person-centered transition services: Implications for school-based practice. *Occupational Therapy International, 11*, 209–228.

Middleton, H., Zollinger, J., & Keene, R. (1986). Popular peers as change agents for the socially neglected child in the classroom. *Journal of School Psychology, 24*, 343-350. doi:10.1016/0022-4405(86)90022-1

Mitchell, R., & Unsworth, C. (2005). Clinical reasoning during community health home visits: Expert and novice differences. *British Journal of Occupational Therapy, 68*, 215–223. http://dx.doi.org/10.1177/030802260506800505

Mikami, A. Y., Lerner, M. D., & Lun, J. (2010). Social context influences on children's rejection by their peers. *Child Development Perspectives, 4*(2), 123-130.

Milson, A., & Glanville, J. L. (2010). Factors mediating the relationship between social skills and academic grades in a sample of students diagnosed with learning disabilities or emotional disturbances. *Remedial and Special Education, 31*(4), 241-251.

Murray, C., & Greenberg, M. T. (2006). Examining the importance of social relationships and social contexts in the lives of children with high-incidence disabilities. *The Journal of Special Education, 39*(4), 220-233.

Myers, C. T. (2008). Descriptive study of occupational therapists' participation in early childhood transitions. *American Journal of Occupational Therapy, 62*, 212–220.

Nadeau, L., & Tessier, R. (2006). Social adjustment of children with cerebral palsy in mainstream classes: peer perception. *Developmental Medicine and Child Neurology, 48*(5), 331 - 336.

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

Norwich, B., & Kelly, N. (2004). Pupils' views on inclusion: Moderate learning difficulties and bullying in mainstream and special schools. *British Educational Research Journal, 30*(1), 43-65.

Nota, L., Ferrari, L., & Soresi, S. (2005). Elementary school children's willingness to help and be friends with disabled peers. *International Journal on Disability and Human Development, 4*(2), 131-137.

Nowicki, E. A., Brown, J., & Stepien, M. (2014). Children's thoughts on the social

   exclusion of peers with intellectual or learning disabilities. *Journal of Intellectual*

   Disability Research, 58(4), 346-357. doi:10.1111/jir.12019

Nowicki, E. A., & Sandieson, R. (2002). A meta-analysis of school-age children's

   attitudes towards persons with physical or intellectual disabilities. *International*

   Journal of Disability, Development and Education, 49, 243–265.

Odom, S. L., Zercher, C., Li, S., Marquart, J. M., Sandall, S., & Brown, W. H. (2006).

   Social acceptance and rejection of preschool children with disabilities: A mixed-

   method analysis. *Journal of Educational Psychology, 98*(4), 807-823.

O'Donovan, M. A., Doyle, A., & Gallagher, P. (2009). Barriers, activities and

   participation: Incorporating ICF into service planning datasets. *Developmental*

   Neurorehabilitation, 31(25), 2073-2080.

O'Rourke, J., & Houghton, S. (2008). Perceptions of secondary school students with mild

   disabilities to the academic and social support mechanisms implemented in

   regular classrooms. *International Journal of Disability, Development and*

   Education, 55(3), 227 - 237. doi:10.1080/10349120802268321

Orr, A. C. (2009). New special educators reflect about inclusion: Preparation and K-12

   current practice. *Journal of Ethnographic & Qualitative Research, 3*, 228-239.

Orsmond, G. I., Shattuck, P. T., Cooper, B. P., Sterzing, P. R., & Anderson, K. A. (2013).

   Social participation among young adults with an autism spectrum disorder.

   Journal of Autism and Developmental Disorders, 43, 2710–2719.

Patton, M. Q. (2002). Qualitative Research and Evaluation Methods (3rd ed.). Thousand

   Oaks, CA: Sage.

Pearson, V., Eva, L., Ernest, C., & Wong, D. (2003). A heart to learn and care? Teachers'

    responses toward special needs children in mainstream schools in Hong Kong.

    Disability & Society, 18, 489-508.

Piskur, B., Daniels, R., Jongmans, M. J., Ketelaar, M., Smeets, R. J., Norton, M., &

    Beurskens, A. J. (2014). Participation and social participation: are they distinct

    concepts? *Clinical Rehabilitation, 28*(3), 211-220.

Pivik, J., McComas, J., MacFarlane, I., & LaFlamme, M. (2002). Using virtual reality to

    teach disability awareness. *Journal of Educational Computing Research, 26*(2),

    203 - 218.

Plata, M., Glasgow, D., & Trusty, J. (2005). Adolescents with learning disabilities: Are

    they allowed to participate in activities? *The Journal of Educational Research,*

    98(3), 136-143.

Porter, S. R., Whitcomb, M. E., & Weitzer, W. H. (2004). Multiple surveys of students

    and survey fatigue. *New Directions for Institutional Research*, 63 – 73.

Prellwitz, M., & Tamm, M. (2000). How children with restricted mobility perceive their

    school environment. *Scandinavian Journal of Occupational Therapy, 7*, 165-173.

Punch, R., & Hyde, M. (2005). The social participation and career decision-making of

    hard-of-hearing adolescents in regular classes. *Deafness and Education*

    International, 7, 122–138.

Raghavendra, P., Olsson, C., Sampson, J., McInerney, R., & Connell, T. (2012). School

    participation and social networks of children with complex communication needs,

    physical disabilities, and typically developing peers. *Augmentative and*

    Alternative Communication, 28(1), 33 - 43.

Reagans, R. (2011). Close encounters: Analyzing how social similarity and propinquity contribute to strong network connections. *Organization Science, 22*(4), 835-849.

Reina, R., Lopez, V., Jimenez, M., Farcia-Calvo, T., & Hutzler, Y. (2011). Effects of awareness interventions on children's attitudes toward peers with a visual impairment. *International Journal of Rehabilitation Research, 34*(3), 243-248.

Reis, E. M. (1988). Improving attitudes of nonretarded fourth graders toward people who are mildly mentally retarded: Implications for mainstreaming. *Education and Training in Mental Retardation, 23*, 85 - 91.

Reschly, A. L., & Christenson, S. L. (2006). Prediction of dropout among students with mild disabilities: A case for the inclusion of student engagement variables. *Remedial and Special Education, 27*(5), 276-292.

Richardson, P. K. (2002). The school as social context: Social interaction patterns of children with physical disabilities. *The American Journal of Occupational Therapy, 56*(3), 296 - 304.

Richardson, P. K., Florey, L., & Greene, S. (2001). Facilitating social interactions in children with disabilities. *Occupational Therapy Practice, 6*(1), CE-1 - CE-8.

Rillotta, F., & Nettelbeck, T. (2007). Effects of an awareness program on attitudes of students without an intellectual disability towards persons with an intellectual disability. *Journal of Intellectual & Developmental Disability, 32*(1), 19-27.

Rose, C. A., Espelage, D. L., & Monda-Amaya, L. E. (2009). Bullying and victimization rates among students in general and special education: A comparative analysis. *Educational Psychology, 29*(7), 761-776. doi:10.1080/01443410903254864

Rosenbaum, P., Armstrong, R., & King, S. (1986). Children's attitudes toward disabled

    peers: A self-report measure. *Journal of Pediatric Psychology, 11*, 517-530.

Ruijs, N. M., & Peetsma, T. T. D. (2009). Effects of inclusion on students with and

    without special educational needs reviewed. *Educational Research Review, 4*(2),

    67-79.

Ryndak, D. L., Ward, T., Alper, S., Montgomery, J. W., & Storch, J. F. (2010). Long-

    term outcomes of services for two persons with significant disabilities with

    differing educational experiences: A qualitative consideration of the impact of

    educational experiences. *Education and Training in Autism and Developmental

    Disabilities, 45*(3), 323-338.

Sackett, D.L., Rosenberg, W.M., Gray, J.A., Haynes, R.B., & Richardson, W.S. (1996).

    Evidence based medicine: What it is and what it isn't. *British Medical Journal,

    312*, 71-72.

Sale, P., & Carey, D. M. (1995). The sociometric status of students with disabilities in a

    full-inclusion school. *Exceptional Children, 62*, 6-19.

Salend, S. J., & Moe, L. (1983). Modifying nonhandicapped students' attitudes toward

    their handicapped peers through children's literature. *Journal for Special

    Education, 19*(3), 22 - 28.

Salminen, A., Harra, T., & Lautamo, T. (2006). Conducting case study research in

    occupational therapy. *Australian Occupational Therapy Journal, 53*, 3 - 8.

Sepanski, B., & Fisher, T. F. (2011). Psychosocial occupational therapy and school-based

    practice. *Special Interest Quarterly Early Intervention & School, 18*(1), 1-4.

Shokoohi-Yekta, M., & Hendrickson, J. M. (2010). Friendships with peers with severe

    disabilities: American and Iranian secondary students' ideas about being a friend.

    Education and Training in Autism and Developmental Disabilities, 45, 23-37.

Siller, J., Ferguson, L.T., Vann, D.G., & Holland, B. (1967). Structure of attitudes toward

    the physically disabled: The disability factor scales-amputation, blindness,

    cosmetic conditions. *Studies in reactions to disability: XII*. New York University

    School of Education, New York.

Simeonsson, R. J., Carlson, D., Huntington, G. S., McMillen, J. S., & Brent, J. L. (2001).

    Students with disabilities: A national survey of participation in school activities.

    Disability and Rehabilitation, 23, 49-63. doi:10.1080/096382801750058134

Siperstein, G. (2006). Adjective Checklist (ACL). In Salkind N, editor. *Encyclopedia of

    Measurement & Statistics.* Thousand Oaks, CA: Sage Publications.

Siperstein, G. N., Parker, R. C., Bardon, J. N., & Widaman, K. F. (2007). A national

    study of youth attitudes toward the inclusion of students with intellectual

    disabilities. *Exceptional Children, 73*(4), 435-455.

Siperstein, G. N., Parker, R., Norins, J., & Widaman, K. F. (2011). A national study of

    Chinese youth attitudes toward students with intellectual disabilities. *Journal of

    Intellectual Disability Research, 55*, 370-384.

Smith-D'Arezzo, W.M., & Moore-Thomas, C. (2010). Children's perceptions of peers

    with disabilities. *Teaching Exceptional Children Plus, 6*(3), 2-16.

Spencer, J. E., Emery, L. J., & Schneck, C. M. (2003). Occupational therapy in

    transitioning adolescents to post-secondary activities. *American Journal of

    Occupational Therapy, 57*, 435–441.

Spencer, K. C., Turkett, A., Vaughan, R., & Koenig, S. (2006). School-based practice

 patterns: A survey of occupational therapists in Colorado. *American Journal of*

 Occupational Therapy, 60, 81–91.

Stork, D., & Richards, W. D. (1992). Non-respondents in communication network

 studies: Problems and possibilities. *Group and Organizational Management, 17,*

 193-209.

Stucki, G., Cieza, A., & Melvin, J. (2007). The International Classification of

 Functioning, Disability and Health (ICF): A unifying model for the conceptual

 description of the rehabilitation strategy. *Journal of Rehabilitative Medicine,*

 39(4), 279 - 285. doi:10.2340/16501977-0041

Sun, C. M. (2007). The impact of inclusion-based education on the likelihood of

 independence for today's students with special needs. *Journal of Special*

 Education Leadership, 20(2), 84-92.

Swaim, K. F., & Morgan, S. B. (2001). Children's attitudes and behavioral intentions

 toward a peer with autistic behaviors: Does a brief educational intervention have

 an effect? *Journal of Autism and Developmental Disorders, 31*(2), 195 - 205.

Symes, W., & Humphrey, N. (2010). Peer-group indicators of social inclusion among

 pupils with autistic spectrum disorders (ASD) in mainstream secondary schools:

 A comparative study. *School Psychology International, 31*(5), 478-494.

Thirumanickam, A., Raghavendra, P., & Olsson, C. (2011). Participation and social

 networks of school-age children with complex communication needs: A

 descriptive study. *Augmentative and Alternative Communication, 27*(3), 195-204.

Todres, L. (2005). Clarifying the life-world: Descriptive phenomenology. In I. Holloway (Ed.), *Qualitative research in health care* (pp. 104-124). Maidenhead: Open University Press.

Townsend, E., Wilcock, A.A. (2004). Occupational justice and client-centered practice: A dialogue in progress. *Rehabilitation, 71*(2), 75-87.

Trepanier-Street, M. L., & Romatowski, J. A. (1996). Young children's attitudes toward the disabled: A classroom intervention using children's literature. *Early Childhood Special Education, 24*(1), 45 - 49.

van Asselt-Goverts, A. E., Embregts, P. J., Hendriks, A. H., Wegman, K. M., & Teunisse, J. P. (2015). Do social networks differ? Comparison of the social networks of people with intellectual disabilities, people with autism spectrum disorders and other people living in the community. *Journal of Autism and Developmental Disorders, 45*(5), 1191-1203. doi:10.1007/s10803-014-2279-3

Vance, Y. H., & Eiser, C. (2002). The school experience of the child with cancer. *Child: Care, Health And Development, 28*(1), 5-19.

Verderber, M. S., Rizzo, T. L., & Sherrill, C. (2003). Assessing student intention to participate in inclusive physical education. *Adapted Physical Activity Quarterly, 20*(1), 26-45.

Vignes, C., Coley, N., Grandjean, H., Godeau, E., & Arnaud, C. (2008). Measuring children's attitudes towards peers with disabilities: A review of instruments. *Developmental Medicine and Child Neurology, 50*(3), 182-189.

Vignes, C., Godeau, E., Sentenac, M., Coley, N. Navarro, F., Franjean, H., & Arnaud, C. (2009). Determinants of students' attitudes towards peers with disabilities. *Developmental Medicine & Child Neurology, 51*(6), 473-479.

Voeltz, L. M., (1982). Effects of structured interactions with severely handicapped peers on children's attitudes. *American Journal of Mental Deficiency, 86*(4), 380 - 390.

Voeltz, L. (1980). Children's attitudes toward handicapped peers. *American Journal of Mental Deficiency, 84*, 455-464.

Vrkljan, B. H. (2005). Reflections on...dispelling the disability stereotype: Embracing a universalistic perspective of disablement. *The Canadian Journal of Occupational Therapy, 72*(1), 57 - 59.

Wagner, M., Cadwallader, T. W., Garza, N., & Cameto, R. (2004). Social activities of youth with disabilities. *NLTS2 Data Brief, 3*(1), 1-4.

Wendelborg, C., & Tossebro, J. (2011). Educational arrangements and social participation with peers amongst children with disabilities in regular schools. *International Journal of Inclusive Education, 15*(5), 497-512.

Westervelt, V. D., & McKinney, J.D. (1980). Effects of a film on nonhandicapped children's attitudes toward handicapped children. *Exceptional Children, 46*(4), 294-296.

Whitehurst, T., & Howells, A. (2006). 'When something is different people fear it': Children's perceptions of an arts-based inclusion project. *Support for Learning: British Journal of Learning Support, 21*(1), 40-44.

Wiener, J., & Schneider, B. H. (2002). A multisource exploration of the friendship patterns of children with and without learning disabilities. *Journal of Abnormal Child Psychology, 30*(2), 127-141.

Wight, M., & Chapparo, C. (2008). Social competence and learning difficulties: Teacher perceptions. *Australian Occupational Therapy Journal, 55*(4), 256-265.

Wolf, L., Ripat, J., Davis, E., Becker, P, & MacSwiggan, J. (2011). Applying an occupational justice framework. *Occupational Therapy Now*. Retrieved from http://www.caot.ca/otnow/jan10/justice.pdf

Wolters, N., Knoors, H., Cillessen, A. N., & Verhoeven, L. (2014). Social adjustment of deaf early adolescents at the start of secondary school: The divergent role of withdrawn behavior in peer status. *Exceptional Children, 80*, 438–453.

Wong, D. K. P. (2008). Do contacts make a difference? The effects of mainstreaming on student attitudes toward people with disabilities. *Research in Developmental Disabilities, 29*(1), 70-82.

World Federation of Occupational Therapists (WFOT). (2008). Position statement: Inclusive occupational therapy education. Available: WFOT_Position_Statement_Inclusive_Occupational_Therapy_Education_CM20 08.

Yuker, H.E., Block, J.R., & Young, J.H. (1970). *The measurement of attitudes toward disabled persons.* Albertson, NY: Human Resource Center.

World Health Organization, W. H. O. (2003). Social determinants of health: The solid facts, second edition. In R. Wilkinson & M. Marmot (Eds.). Denmark: WHO Library Cataloguing.

World Health Organization, W. H. O. (2007). International classification of functioning,

disability and health. WHO, Switzerland.

VITA

Kelly L. Leigers, MS, OTR/L

Education

Masters of Science in Occupational Therapy with a Concentration in Pediatrics, 2004
Virginia Commonwealth University (VCU), Richmond, VA.
- Thesis entitled: *Students' Perceptions of an Innovative Occupational Therapy Program for Adolescents At-risk in a Non-traditional Educational Setting.*

Bachelor of Science in Occupational Therapy and Psychology, 1999
Eastern Kentucky University (EKU), Richmond, KY.
- Graduated "Magna Cum Laude" from EKU
- Graduated "With Honors" from EKU following completion of requirements as outlined by the Honors Program (1999)

Additional Training and Certifications

Graduate Certificate in Developmental Disabilities. Human Development Institute, University of Kentucky. May 2016

Interactive Metronome Certification - Provider. 2013

Virginia Leadership Education in Neurodevelopmental Disabilities (VA-LEND) Program, Partnership for People with Disabilities, Virginia Commonwealth University, Richmond, VA. July 2004.

Professional Positions

Eastern Kentucky University, Department of Occupational Science and Occupational Therapy, Richmond KY, Assistant Professor, August 2015 – present.

Eastern Kentucky University, Department of Occupational Science and Occupational Therapy, Richmond KY, Senior Clinical Faculty/Academic Fieldwork Coordinator Assistant, August 2014 – May 2015.

Eastern Kentucky University, Department of Occupational Science and Occupational Therapy, Richmond KY, Clinical Faculty/Academic Fieldwork Coordinator Assistant, August 2010 – May 2014.

Eastern Kentucky University, Department of Occupational Science and Occupational Therapy, Richmond KY, Adjunct Faculty, August 2009 – May 2010.

Hands-On-Therapy. Serving central and western KY, school-based Occupational Therapist, October 2007 – July 2009.

Cardinal Hill Rehabilitation Hospital. Lexington, KY, out-patient rehabilitation, Occupational Therapist, May 2007 – January 2009.

First Steps – Kentucky Cabinet for Health and Family Services. Serving central, western, and northern Kentucky, early intervention, Occupational Therapist, December 2007 – December 2008.

Henrico County Public Schools. Richmond, VA, school-based, Occupational Therapist, August 2001 – January 2007. (08/2001 – 01/2007).

MedShares Home Health Agency. Richmond, VA, home health, Occupational Therapist, June 2000 – September 2001.

Virginia Commonwealth University, Department of Occupational Therapy, Richmond, VA, Teacher's Assistant, August 2000 – December 2000.

Publications and Presentations

Leigers, K. L., Kleinert, H., & Carter, E. (2017). 'I never truly thought about them having friends': Equipping schools to foster peer relationships. *Rural Special Education Quarterly.*

Fette, C., Collette, D. L., Ponsolle-Mays, M., Rai, G., Leigers, K., Majeski, K., & Olson, L. (April 1, 2017). *Opportunities for Occupational Therapy Practitioners in Reauthorization of Elementary and Secondary Education Act to Every Student Succeeds Act (ESSA).* American Occupational Therapy Association Annual Conference and Centennial Celebration. Philadelphia, PA.

Leigers, K. L., Myers, C. T., & Schneck, C. (2016). Addressing social participation in the schools: A survey of occupational therapy practitioners. *American Journal of Occupational Therapy, 70*(5).

Leigers, K. L. (March 12, 2016). *Improving the Social Participation of Students with Disabilities in Inclusionary Settings.* Seventh Annual Conference on Meeting the Therapy Needs of Infants, Toddlers, and Children with Disabilities in Rural Communities. University of Kentucky/Eastern Kentucky University

Leigers, K. L. (March 5, 2016), *Collaboration in School Based Practice* (Keynote Speaker). Kentucky Occupational Therapy Association Student Conference. Cardinal Hill Rehabilitation Hospital, Lexington, KY

Leigers, K. L, & Myers, C. T. (2015). Effect of duration of peer awareness education on attitudes toward students with disabilities: A systematic review. *Journal of Occupational Therapy, Schools, & Early Intervention, 8*(1), 79-96.