PEER INTERACTIONS AND ROLES OF HIGH SCHOOL STUDENTS WITH
SEVERE DISABILITIES DURING INCLUSIVE SERVICE-LEARNING

BY

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DISSERTATION

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Abstract

The purpose of this mixed methods case study was to examine how high school students with severe disabilities interact with peers and adults, the relationship between specific contextual factors and peer interactions, and the informal roles students with severe disabilities assume during inclusive service-learning. Data were collected through video and live observations of four high school students with severe disabilities throughout an inclusive arts-based service-learning project, and interviews with peers, art teachers, and focus groups of preservice teachers who facilitated the service-learning project. The data were analyzed using a combination of inductive and deductive processes to investigate peer and adult interactions, contextual factors, and the roles assumed by students with severe disabilities during the project. The findings indicate that students with severe disabilities had interactions with peers during inclusive service-learning that ranged in frequency and ease from natural to challenging; the majority of interactions were task related; adults and peers had positive perceptions of group functioning; and adult interactions occurred primarily within the function of providing supports. All of the contextual factors examined were each found to be associated with peer interactions. Students with severe disabilities assumed a variety of roles that fell within the three categories described in the literature: group building roles, task completion roles, and individualistic roles. An additional role category, neutral roles, emerged through the qualitative analysis. Recommendations for future investigations and inclusive service-learning practice are also presented.

To Rafa

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Chapter 1

Introduction

Ensuring high school students with severe disabilities have opportunities to interact with typically developing peers and assume valued roles within general education settings is essential to promoting positive social outcomes. Peer relationships become increasingly important as adolescents enter their high school years, and have a significant impact on an individual's well-being, development of social skills, sense of belonging, and social status (Gallucci, Palombaro, Peck, & Salisbury, 1995). Adolescents develop multiple peer relationships that serve different functions, and they assume a variety of roles within these relationships (Webster & Carter, 2007). These peer relationships develop through frequent opportunities for adolescents to interact.

Recognizing the need to create more opportunities for students with disabilities to interact with peers, the goal of improved social outcomes sparked many of the early calls for inclusive education (Downing & Peckham-Hardin, 2007). Although students with disabilities are increasingly being educated within general education settings, this occurs less frequently at the high school level, particularly for students with the most significant disabilities (Almazan, 2009; Williamson, McLeskey, Hoppey, & Rentz, 2006). Several barriers limit opportunities for students with severe disabilities to be included in general education classes due to misconceptions regarding the narrow view of curriculum that should be addressed within general education classes, and as a result of the traditional format of instruction that is largely lecture-based (Brownell, Sindelar, & Kiely, 2010).

Peer interactions have been examined in a variety of school contexts, including non-instructional school settings, such as cafeterias and playgrounds (Cutts & Sigafoos, 2001),

segregated special education classes, and general education settings (Hunt, Farron-Davis, Beckstead, Curtis, & Goetz, 1994). Typically, peer interactions have been investigated through observations in which specific social behaviors and other contextual variables are recorded over a specified amount of type (Carter et al., 2010). Observations have been implemented as part of both descriptive studies and intervention studies. Within descriptive studies, researchers have examined the nature of peer interactions in specific contexts, such as within inclusive settings (Carter, Hughes, Guth, & Copeland, 2005; Carter et al., 2008). Numerous peer interaction intervention studies have also been conducted, with most occurring at the elementary school level (Carter & Hughes, 2005; Chung, Carter, & Sisco, 2012). Investigations have been conducted to assess the impact of efforts aimed at teaching students with severe disabilities specific interaction skills or providing students with strategies to increase peer interactions. Other intervention studies have addressed low peer interaction levels by involving peers and teaching them communication strategies to engage with the students with severe disabilities, or providing supports or tutoring within specific contexts. A smaller proportion of peer interaction intervention studies have examined the impact of altering the *instructional context* to promote peer interactions. These studies are particularly limited at the high school level. Researchers have recognized that increasing peer interactions may be more effective when addressed using multi-component interventions that combine both peer supports and altering the instructional contexts (Carter, Moss, Hoffman, Chung, & Sisco, 2011; Carter, Sisco, Melekoglu, & Kurkowski, 2007; Kennedy & Itkonen, 1994).

Roles that students with severe disabilities assume in general education settings have been largely ignored in the literature (Webster & Carter, 2007). Researchers outside of the field of special education who examine roles suggest that during group activities, the type of roles one

assumes will influence whether that individual is viewed as a valuable contributing member of the group (Mudrack & Farrell, 1995).

In response to barriers that limit access to general education settings for high school students with severe disabilities, service-learning is a teaching method that has been advocated as a means to create opportunities for students with severe disabilities and their peers to meaningfully interact, address a variety of curricular areas, and assume valued roles through their collaboration to make a contribution to their community (Carter, Swedeen, & Moss, 2012). During inclusive service-learning, students with and without disabilities participate together as equal partners to complete service projects while addressing different curriculum goals (Dymond, Renzaglia, & Slagor, 2011). Several studies have concluded that service-learning can create positive outcomes related to academic and social skills (Billig, 2000), but a very limited number of studies have investigated peer interactions in inclusive service-learning contexts that includes students with severe disabilities (Brill, 1994; Burns, Storey, & Certo, 1999; Chun, 2009), and none has examined the roles students with severe disabilities assume within inclusive service-learning. Even within these studies, only one directly examined peer interactions through systematic observations of behavior (Chun, 2009).

In light of the need for additional investigations of peer interactions of students with severe disabilities at the high school level and the roles these students assume within inclusive service-learning, this study examined the interactions of students with severe disabilities with peers and adults, and the relationship of specific contextual factors to peer interactions during inclusive service-learning. Also investigated were the roles students with severe disabilities assumed within an inclusive service-learning project. A mixed methods approach enabled an examination of peer and adult interactions of students with severe disabilities participating in

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inclusive service-learning through observations of behaviors, such as initiations, responses, reciprocity, and type of interaction. This investigation extends the existing research by investigating the contextual factors related to various types of peer interactions. These contextual factors involved the composition of groups working together during service-learning activities that included a student with severe disabilities and two peers; the type of tasks involved; adult physical proximity; and adult prompting. An investigation of the roles students with severe disabilities assume was conducted through observations of behaviors during inclusive service-learning. Additionally, the perceptions of the peers and educators involved in the project regarding peer interactions and roles were analyzed to provide a more complete view of these constructs. The aim of the study was to advance the field's understanding of the relationship between contextual factors and various peer interactions, and the types of roles students with severe disabilities assume within inclusive service-learning to provide direction for future investigations of this promising practice and practical implications regarding how to structure inclusive service-learning to promote peer interactions.

Definition of Terms

To assist the reader, a description of commonly used terms that refer to the various groups and participants involved in the study is included in the following list:

- Focal student = one of the selected participants who has a severe disability and is a member of a focal group.
- Focal group = a selected group participating in the service-learning project that is composed of three students (one focal student and two peers).
- Peer = one of the selected students without a severe disability who is a member of a focal group.

- Non-focal peer = a student participating in the service-learning project that is not a member of a focal group.

- Group = any group of students other than the focal group that is participating in the service-learning project.

Chapter 2

Literature Review

Adolescence is a time when social relationships become increasingly important and are critical to successfully transitioning into adulthood (Carter et al., 2008). Social interactions with peers are a central means to developing friendships and increasing social competence for students with severe disabilities (Kennedy, Fryxell, & Shikla, 1997). There are many other benefits that can accrue for students with severe disabilities within the context of social interactions, including learning the norms and values of peers and developing a network of supports (Carter et al., 2005). General education classes can offer students with severe disabilities greater opportunities for peer interactions and possibilities for developing peer relationships (Cutts & Sigafoos, 2001). Unfortunately, the intended social benefits of inclusion in general education settings are often not realized for students with severe disabilities. There are multiple barriers that prevent students with severe disabilities from gaining access to these settings and that also diminish opportunities for peer interaction for students who are included in general education classes. Service-learning is an innovative teaching method and one potential approach to addressing barriers for promoting peer interactions within general education settings.

The purpose of this chapter is to provide a review of the literature examining peer interaction and roles of high school students with severe disabilities in general education settings. The review will include descriptive studies of the social outcomes of inclusion and interventions to promote peer interactions for students with severe disabilities. Additionally, the literature review will provide a synthesis of the research on social outcomes of inclusive service-learning. A rationale for examining peer interactions and roles within the context of inclusive service-learning will also be described.

Inclusive Education and Students with Severe Disabilities

Definitions of inclusion or inclusive education have varied widely from a focus on the educational settings where students with disabilities are placed (Wolfe & Hall, 2003) to a philosophy of meeting the needs of all students with and without disabilities (Jackson, Ryndak, & Billingsley, 2000; Kasa & Causton-Theoharis, n.d.). Important features of inclusion have been described as: (a) providing instruction in general education classes (Hunt & Goetz, 1997; Sebba & Ainscow, 1996); (b) providing supports to meet individualized learning objectives (Jackson et al., 2000; Kasa & Causton-Theoharis, n.d); and (c) developing a sense of belonging, equal membership, acceptance, and being valued for students with disabilities (Downing, & Peckham-Hardin, 2007; Jackson et al., 2000). The goals of inclusion have also prompted the call for school reform, in which students with disabilities are not simply assimilated into general education classes, but instead, general education classes and schools are transformed to meet the needs of all students (Sebba & Ainscow, 1996; Sindelar, Shearer, Yendol-Hoppey, & Liebert, 2006; Wolfe & Hall, 2003).

Legal foundations of inclusion. Many of the early calls for inclusion of students with severe disabilities in general education classes was based on the concept of civil rights and on the premise that inclusion would support the social development of students with severe disabilities (Cushing, Carter, Clark, Wallis, & Kennedy, 2008; Downing & Peckham-Hardin, 2007; Harrower & Dunlap, 2001; Harrower, 1999; Hunt & Goetz, 1997). The term *inclusion* is not mentioned in the 2004 amendments to IDEA; however, the amendments do include a Least Restrictive Environment mandate, which states students with disabilities should participate in the general education curriculum, to the maximum extent appropriate, with their peers without disabilities (IDEA, 34 C.F.R. 300,144(a)(2)(i)). Students should be removed from general

education settings, "only when the nature or severity of the disability is such that education in regular classes with use of supplementary aids and services cannot be achieved satisfactorily" (IDEA, 34 C.F.R. 300,144(a)(2)(ii)). Rulings from case law, such as Roncker v. Walter (1983), have also favored individual student's rights to inclusive education based on the responsibility of schools to provide, when feasible, the services that would make a segregated setting superior in an inclusive setting. Additionally, in the case of Sacramento City Unified School District Board of Education v. Holland (1994), the court considered four factors when considering whether a child's placement met the least restrictive environment mandate. One of these factors focused on identifying the benefits of social interactions with peers without disabilities within inclusive settings.

Effects of inclusion on social outcomes. The proposed benefits of inclusion initially focused on the acquisition of social skills and the development of friendships among students with severe disabilities and their typically developing peers. One of the early studies conducted by Cole and Meyer (1991) examined the differences between students in segregated special education schools and students attending integrated schools, but not necessarily included in general education classes. Even this initial step in moving students with severe disabilities to settings with more access to peers demonstrated positive social outcomes. After two years, students integrated into their neighborhood schools had increased levels of social competence, compared to students in segregated schools whose social competence regressed. Subsequent research has supported the beneficial social outcomes of providing students with severe disabilities with inclusive educational opportunities within general education classes including more frequent interactions with peers without disabilities (Foreman, Arthur-Kelly, Pascoe, &

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King, 2004; Hunt et al., 1994; Kennedy et al., 1997), increased social competence (Fisher & Meyer, 2002), and friendships and larger social networks (Kennedy et al., 1997).

Although inclusion has been associated with positive social outcomes, researchers have proposed that merely physically placing a student with a severe disability in general education settings is insufficient to promote on-going, generalized peer interactions and reciprocal social relationships (Freeman & Alkin, 2000; Downing & Peckham-Hardin, 2007; Harrower, 1999; Hilton & Liberty, 1992; Sebba & Ainscow, 1996). For example, Dore, Dion, Wagner, and Brunet (2002) conducted a multiple case study to compare effects of inclusion and segregated settings on engagement during class, and social interactions during lunch for two high school students with severe disabilities, before and after a change from self-contained settings to general education settings. The students were slightly more engaged in tasks in the general education settings, but spent the majority of time working on tasks that were different from their peers. With little common ground established with peers within general education classes, this perhaps explains why the students also did not show a significant increase in the amount of peer interactions during lunch, following their inclusion in the general education classes. In terms of a lack of reciprocity in peer interactions, Evans, Salisbury, Palombaro, Berryman, and Hollowood (1992) observed that elementary-age students with severe disabilities taught in inclusive settings were more frequently on the receiving end of social interactions, rather than initiating interactions with peers.

Barriers to inclusion at the high school level. Students with disabilities are increasingly educated in inclusive settings (Harrower, 1999; McLeskey, Landers, Williamson, & Hoppey, 2010), yet the majority of students with severe disabilities are still routinely excluded from general education classrooms (Almazan, 2009; Williamson et al., 2006). This is particularly

evident at the high school level (Almazan, 2009), where several factors contribute to the limited access to general education settings. One factor that serves as a barrier to inclusion is the considerable difference between the elementary school classroom, where small group instruction and hands-on learning experiences are common, compared to high school general education settings, where instruction tends to be lecture based, with a focus on abstract learning, independent work, and preparation for high stakes testing (Brownell et al., 2010; Carter & Hughes, 2005; Carter et al., 2008). Additionally, the widening academic achievement gap between students with severe disabilities and their peers becomes more pronounced during high school. This can lead to the often mistaken belief that students with severe disabilities must attain the same level of achievement as a typical peer to be successfully included (Kluth, Villa, & Thousand, (2001/2002).

Other barriers to inclusion for high school students with severe disabilities are the differing views on where instruction should occur and the curricular focus of instruction based on the mandates within IDEA (2004) and NCLB (2001). IDEA mandates that all students with disabilities access, participate, and make progress in the general curriculum. The provisions of NCLB also mandate that students with disabilities be included in statewide assessments of academic achievement. This shift from a more traditional curricular focus on functional skills to a broader concern for academic development has prompted differing views regarding the best setting in which to provide access for students with severe disabilities. In some cases, access to the general curriculum has been narrowly defined as core academic subjects and the context for teaching these skills involves segregated settings (Browder, Trela, & Jimenez, 2007; Courtade, Browder, Spooner, & DiBiase, 2010; Falkenstine, Collins, Schuster, & Kleinert, 2009). Others have examined methods for providing access to the full range of general curriculum, including

academic and functional skills taught within both general education classrooms and community settings (Hansen & Morgan, 2008; Jameson, McDonnell, Polychronis, & Riesen, 2008).

Descriptive Investigations of Peer Interactions of Students with Severe Disabilities

Several descriptive studies have been conducted to describe the nature of peer interactions that involved students with severe disabilities and the contextual factors that are associated with peer interactions and relationships. These studies have laid the groundwork for providing a greater understanding of how students with severe disabilities and peers interact and how interventions may be designed to promote increased interaction and greater parity in these relationships. The majority of descriptive studies of peer interactions that involve students with severe disabilities have focused on preschool and elementary-age students with severe disabilities (Carter et al., 2008; Carter et al., 2010; Dymond & Russell, 2004). Additional studies have also examined peer interactions in high school settings (Carter et al., 2005; Carter et al., 2008; Cutts, & Sigafoos, 2001; Mu, Siegel, & Allinder, 2000).

Methods of data collection. Various observation procedures have been implemented to descriptively analyze peer interactions and their associated instructional contexts within general education settings. Partial interval and momentary time sampling procedures have been implemented most frequently within these descriptive studies (Chung et al., 2012; Dymond & Russell, 2004; Mu et al., 2000). A 10-second observation interval, followed by a 10-second recorded interval (Carter et al., 2005; Mu et al., 2000) and 1-minute observing, followed by 1-minute recording (Chung et al., 2012; Dymond & Russell, 2004) have been most frequently used. Event recording and frequency counts of social interaction variables have also been implemented (Carter et al., 2008). The duration of sessions spent observing students with

disabilities and their peers has also varied considerably, with sessions ranging from 10 minutes (Carter et al., 2005) to entire class periods of 83 minutes (Carter et al. 2008).

General education contexts examined. Haring and Breen (1989) note that academic classes dominated by lecture provide fewer opportunities for peer interactions compared to elective or non-core academic classes. The different instructional formats within academic and elective courses, as they are related to peer interaction outcomes, have also been examined, including differences found during large group instruction, small group instruction, and independent seatwork (Carter et al., 2008; Chung et al., 2012; Dymond & Russell, 2004). Other researchers have selected elective classes, such as culinary arts, in which a small group instructional format was most common, to examine differences between peer interaction of students with severe disabilities and peers (Mu et al., 2000).

Peer interaction variables. Haring and Breen (1989) propose that social interactions can be affected through three dimensions: social interaction functions; support and structure variables; and the setting in which social interactions occur. When selecting social interaction functions to target for interventions, they suggest selecting behaviors that address pivotal skills, including *initiations, responses, and reciprocity*. Pivotal skills are defined as a "response that enables a person to participate in a broad series of opportunities that would otherwise be unavailable" (p. 259). Haring and Breen define initiations as "any behavior with communicative intent directed toward and acknowledged by another person" that can be verbal or nonverbal (p. 259). They define responses as "any behavior that serves to acknowledge but not further a social initiation" (p. 259). Reciprocity is defined as completion of a social turn, in which a turn is an "elaboration of an initiation or response that is followed by a response" that involves participation from both conversation partners (p. 259).

Many descriptive studies have included slight variations on the basic definitions of social interaction functions presented by Haring and Breen (1989), and some have added variables to create a more complete understanding regarding the nature of peer interactions. Most often, initiations, responses, or instances of peer interactions have been examined (Carter et al., 2005; Carter, et al., 2008; Chung et al., 2012; Dymond & Russell, 2004; Mu et al., 2000). Often in the descriptive studies that provide operational definitions of initiations, researchers did not include the requirement of acknowledgement of an initiation, recognizing that peers may not be aware of the idiosyncratic methods of communication many students with severe disabilities use (Carter et al., 2008; Chung et al., 2012). Many descriptive studies use Haring and Breen's definition for a response, but add a time constraint, stating that the interactions must occur within a specified time period. Otherwise, the response is called an initiation, instead of a response (Carter et al., 2008; Chung et al., 2012). In descriptive studies that measured instances of peer interactions, the researchers did not specify whether the social interaction function was an initiation or a response, but rather simply noted that an interaction behavior occurred (Carter et al., 2005; Carter et al., 2011). Reciprocity has also often been examined in descriptive studies (Carter et al., 2005; Carter et al., 2008; Chung et al., 2012). Reciprocity of interactions was defined in these studies as one or more turns for all interaction partners involved, with the exception of Carter et al. (2005) who defined reciprocity as a balance between the amount of initiations observed for both the student with a disability and the peer. The studies also identified the interaction partners of the student with the severe disability.

Researchers seeking to overcome some of the limitations of only measuring initiations, responses, instances of interactions, and reciprocity have measured additional peer interaction variables within descriptive studies involving students with severe disabilities, including the

conversational topic; the quality of the interaction; the affect of interaction partners; the functional communication level of the student with a disability (Carter et al., 2005); the communication mode, such as speech, signs, or aided AAC (Chung et al., 2012); and the total number of different peer interaction partners for each session (Carter et al., 2008). Observations of peer interactions have also been categorized by type or communicative function, such as social or task related; or providing or receiving assistance (Carter et al., 2008; Chung et al., 2012), and by duration of the interaction (Chung et al., 2012; Mu et al., 2000).

Instructional context variables. Descriptive studies of peer interactions have included a wide variety of instructional context variables to understand their influence on peer interactions. Researchers have most often examined the influence of instructional format, such as whole group lecture, small group, and independent work on peer interactions (Carter et al. 2008; Chung et al., 2012; Dymond & Russell, 2004). They have also frequently examined the influence of physical proximity to adults, in particular paraprofessionals who are often assigned to students with severe disabilities as individual supports within general education classes (Carter et al. 2008; Chung et al., 2012; Rossetti, 2012). Recognizing that mere physical placement in inclusive classes does not adequately increase peer interactions; some researchers have also examined the extent to which the physical proximity of a peer buddy (i.e., a student assigned as a support to a student with a severe disability) influences the frequency of peer interactions (Chung et al., 2012; Carter et al., 2005). Other instructional context variables examined have included occurrence of prompting by adults (Carter et al., 2005; Chung et al., 2012); student academic engagement (Carter et al. 2008; Dymond & Russell, 2004); and physical proximity of a student's AAC device (Chung et al., 2012). All though not described through observations, the type of task is an instructional context variable that may influence the frequency of peer interactions.

Findings from descriptive studies of peer interactions. Overall the findings from descriptive studies involving students with severe disabilities within general education classes demonstrate the need for intentional efforts to increase peer interactions. Overwhelmingly, descriptive studies have found that students with severe disabilities have low to moderate levels of peer interactions within general education classes (Carter et al., 2005; Chung et al., 2012; Dymond & Russell, 2004; Mu et al., 2000). Chung, Carter, and Sisco (2012) found peer interactions were more reciprocal when initiated by students with disabilities compared to a frequent lack of response by students with disabilities when peers initiated interactions. Peers initiated interactions more frequently compared to students with disabilities (Chung et al., 2012). Students with disabilities tend to be on the receiving end for types of interactions, such as receiving instructions or assistance (Mu et al., 2000). Students with disabilities also tend to interact more frequently with adults than peers (Dymond & Russell, 2004). Studies found variations in the types of conversational topics involving students with severe disabilities and peers, with Carter et al. (2005) finding a variety of topics that were social and task related being discussed. Carter et al. (2008) and Mu, Siegel, and Allinder (2000) found that interactions were predominately task related.

Researchers have identified several instructional contextual variables that influence peer interactions. Physical proximity of a peer buddy is positively associated with the quality, frequency of social interactions, and positive affect for students with disabilities (Carter et al., 2005). When a peer buddy was in physical proximity to a student with a severe disability, the student with a disability had more frequent, higher quality interactions and a more positive affect than when the peer buddy was not in physical proximity. In addition, the type of general education class and the instructional format were found to influence peer interaction outcomes.

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Carter et al. (2008) found that peer interactions were more frequent during elective classes compared to academic core classes, but Chung et al. (2012) found no significant difference between these settings. Peer interactions were found to be more frequent during small group instruction than during whole group instruction or independent work (Carter et al., 2008; Chung et al., 2012). Physical proximity of adults was found to negatively impact frequency of peer interactions (Carter et al., 2005; Carter et al., 2008; Rossetti, 2012). Although not examined for a relationship to frequency of peer interactions, adult prompting for students with severe disabilities and peers to interact with each other was found to occur in less than a third of the time in general education settings (Carter et al., 2005). Adult prompting for students with a severe disability to use a specific communication mode (e.g. AAC device, speech) occurred less than 10% of the time in general education settings (Chung et al., 2012).

Interventions Targeting Peer Interactions of Students with Severe Disabilities

Peer interaction interventions have been the focus of three recent systematic literature reviews (Carter et al., 2010; Chung et al., 2012; Hughes et al., 2012). In their review of the peer interaction intervention literature, Carter et al. (2010) categorized interventions into three types, including student-focused, peer-focused, and support-focused practices. Student-focused practices include interventions aimed at teaching interaction skills to students with disabilities. Peer-focused practices involve training peers, with the goal of increasing peer interactions with students with disabilities. Support-focused practices are those in which adults work to create environments that will support peer interaction, including providing students with disabilities or peers with prompts, modeling interactions, and/or adapting curriculum or the instructional format.

The three categories identified by Carter et al. (2010) will serve as the framework for discussing the literature on peer interaction interventions focused on high school students with severe disabilities implemented within general education classes. Eight single subject design studies were identified. Two studies examined student-focused interventions, one study investigated peer-focused interventions, and five studies examined interventions that combined peer-focused and support-focused interventions.

Student-focused interventions. Three studies presented student-focused interventions. These studies included interventions in which students with severe disabilities were taught to use AAC with a conversation book (Hughes et al., 2002; Hunt, Alwell, & Goetz, 1991) and to use self-prompting to initiate and sustain conversations with peers (Hughes et al., 2002; Hughes et al., 2004). Multiple peer interaction variables were examined, including initiations (Hughes et al., 2002; Hughes et al., 2004; Hunt et al., 1991), responses (Hughes et al., 2002), reciprocity of interactions (Hunt et al., 1991), quality of interactions (Hughes et al., 2004), and maintaining proper head positioning and eye gaze with an interaction partner (Hughes et al., 2002). Data were collected in two studies through event recording (Hughes et al., 2002; Hughes et al., 2004; Hunt et al., 1991), and in one study by partial interval recording with 10-seconds of observing, followed by 10-seconds of recording (Hughes et al., 2002). Social validity measures were also conducted to gather the perspectives of peers, students with disabilities, and teachers regarding the effectiveness of the interventions, and the peers' feelings about working with the students with severe disabilities (Hughes et al., 2002; Hughes et al., 2004).

Instructing students to use conversation books and self-prompting were found to be effective strategies for increasing the frequency and quality of peer interactions. An advantage of using the self-prompting strategy was that it could be embedded within naturally occurring

interactions. A shortcoming of the self-prompting intervention, as presented in these studies, was its use to only prompt discrete communicative behaviors, such as saying hello or thank you, that would not necessarily provide a means to promote sustained social engagement with peers. Hunt et al. (1991) found that while the effects of conversation books on sustaining conversations did not generalize to new untrained interaction partners, family members who were trained could teach other conversational partners to use the strategy with the student with a severe disability.

Peer-focused interventions. Six studies implemented peer-focused interventions. The specific practices included in these peer-focused interventions included: peer awareness (Carter et al., 2011; Kennedy et al., 1997; Kennedy & Itkonen, 1994), peer supports (Carter et al. 2005; Carter et al., 2011; Carter et al., 2007; Hunt et al., 1991; Kennedy et al., 1997; Kennedy & Itkonen, 1994), and peer tutoring (Carter et al. 2005). As part of peer awareness interventions to promote interactions, peers were provided with information regarding shared interests, favorite activities, and preferred communication modes of the students with disabilities (Carter et al., 2011). Within peer support interventions, specific peers were recruited, often by nominations from general education teachers or through the peers volunteering, to provide academic and social support within the classroom (Kennedy et al., 1997). Within peer support arrangements, collaboration and the importance of social relationships were emphasized to the peers (Carter et al., 2007; Kennedy & Itkonen, 1994). Peers were also provided with strategies for communicating or supporting students in class (Carter et al., 2007; Hunt et al., 1991) and were encouraged to support communication with other classmates (Carter et al., 2005). Two studies also added peer tutoring as part of the intervention, where peers were provided with training to adapt curriculum to address specific IEP objectives for students with disabilities. Peers in these studies also provided systematic instruction to the students with severe disabilities, with

feedback on the peers' performance provided by special education teachers (Carter et al., 2005; Kennedy et al., 1997).

The studies in which peer-focused interventions were implemented examined the following peer interaction variables: initiations (Carter et al., 2005; Carter et al., 2011; Carter et al., 2007), persons involved in the interaction (Carter et al., 2005; Carter et al., 2007), quality of interactions (Carter et al., 2005), conversational topic categorized as either task related or social related (Carter et al., 2011; Carter et al., 2007), communication mode, and the different number of peers contacted (Carter et al., 2011). The outcome measures selected by Kennedy et al. (1997) and Kennedy and Itkonen (1994) focused on a broader category of peer interactions, which they termed social contacts. Social contacts included interactions between a student with a severe disability and a peer within the context of an ongoing activity that was at least 15-minutes in duration. The social networks of the students with disabilities were also collected through peer nominations for these two studies.

Measures assessing instructional context variables and social validity were also implemented. Researchers examined the influence of instructional context variables on peer interactions, including instructional format (Carter et al., 2005; Carter et al., 2007); physical proximity to peers, adults, or to AAC devices (Carter et al., 2011; Carter et al., 2007); and social support behaviors of peers and paraprofessionals (Carter et al., 2011). Carter et al. (2005) specifically examined the differential effects of assigning one peer versus two peers as supports for students with severe disabilities on peer interactions. Although infrequently conducted for peer-support focused interventions, social validity measures included interviews and questionnaires administered to peers, teachers, and with one participating student with a severe

disability (Carter et al., 2011). These were administered to assess perceptions of intervention feasibility or effectiveness.

Peer-support interventions implemented alone, or in combination with student-focused or support-focused interventions, demonstrated positive impacts on peer interactions. For the only study based solely on peer-support interventions, Carter et al. (2005) found that assignment of two peer support partners, rather than only one, had a greater impact on increasing the frequency of peer interactions, but the quality of interactions was not influenced by either arrangement. The researchers also suggest that peer supports that include two peer support partners might promote greater collaboration and interdependence when working on tasks. In other findings for the studies that included peer-focused interventions and examined other instructional context variables, peer interactions were more frequent during small group instruction compared to large group or independent seat work (Carter et al., 2005); students with disabilities interacted less with paraprofessionals (Carter et al., 2011; Carter et al., 2007); the effects of the peer support arrangements tended to be limited to the partners involved in the peer support group (Carter et al., 2007); and peer support behaviors provided were primarily academic instead of social (Carter et al., 2011). In the studies conducted by Kennedy et al. (1997) and Kennedy & Itkonen (1994), the findings for both studies demonstrated that the combination of the peer-focused and support-focused interventions increased the number of social contacts students with disabilities engaged in with peers and the social network of these students. The measures of social networks included in both studies did not assess whether the friendships were reciprocal, which would have helped to explain if the hierarchical roles assigned to the peers and students with disabilities in the peer tutoring arrangement caused a negative impact on friendship development.

Support-focused interventions. Four studies included support-focused interventions in combination with peer-focused supports, and the findings from these studies were previously described in the peer-focused interventions section. The support-focused interventions included direct adult facilitation (Carter et al., 2011; Carter et al., 2007) and educational placement (Kennedy et al., 1997; Kennedy & Itkonen, 1994). During direct adult facilitation, educators promote peer interactions through prompts, modeling, and facilitation directed at peers and students with disabilities. For educational placement interventions, educators intentionally collaborate to create a classroom environment that will promote peer interactions through placement of students in general education classes and by providing appropriate supports, such as adapting curriculum to engage students with disabilities in academic activities with their peers.

The studies examining support-focused interventions, which were in combination with peer-focused interventions, did not conduct component analysis to determine whether the support-focused intervention had a greater effect on peer interactions compared to the peer-focused intervention components. The researchers also did not include treatment fidelity measures for the support-focused intervention components. For example, in the studies conducted by Carter et al. (2007) and Carter et al. (2011), paraprofessionals were trained to facilitate peer interactions through modeling, prompting, and highlighting shared interests, but the frequency of the paraprofessionals providing these supports was not assessed. These measures might have indicated whether these direct adult facilitation supports were an essential component of the intervention. Similarly, interventions focused on educational placement as the support-focused intervention did not assess treatment fidelity with regards to the level of collaboration that occurred among special education and general education teachers or the

amount of curricular revisions that were implemented for students with severe disabilities (Kennedy et al., 1997; Kennedy & Itkonen, 1994).

Gaps in the peer interaction intervention literature base. Particularly lacking in the peer interaction intervention literature are studies at the high school level of interventions that incorporate peer-focused and support-focused interventions that will promote collaboration through parity in student roles and through instructional formats and activities. Kennedy (2001) proposed a shift in how researchers should conceptualize the development of peer interaction interventions, from student-focused interventions that aim to develop independence for the individual with severe disabilities to developing interventions that promote interdependence. Considering that individuals with severe disabilities will require extensive supports throughout their lives, and that all humans, regardless of ability status, are dependent on others in their everyday lives, promoting interventions that focus on interdependence is a logical proposition. Similarly, many researchers have recognized the need to develop interventions that influence the outcomes of peer interactions through interventions that involve peers as supports and alter instructional context variables to promote peer interactions (Carter et al., 2010). Researchers have begun to address this need by conducting studies that combine elements of student-focused, peer-focused, and support-focused interventions. More studies need to be conducted at the high school level to assess the effectiveness of these types of interventions.

Another gap in the peer interaction literature is the limited research or descriptions within existing peer-focused intervention studies regarding how peers are selected for providing peer supports and the influence of the peer composition on interactions. Other than studies examining the differences between students who volunteer and do not volunteer to participate in peer support programs (Carter, Hughes, Copeland, & Breen, 2001; Haring, Breen, Pitts-Conway,

Lee, & Gaylord-Ross, 1987), little is known about the effects of teachers' choices for selecting

peers to serve as supports. Most frequently, peers are described as being recruited or selected by

educators based on their perceptions of the peers' interest in working with students with

disabilities (Carter et al., 2011). Other studies have described educators' choice of peers based on

the belief that these particular students will be patient or helpful toward the student with a

disability (Belland, Glazewski, & Ertmer, 2009); the student with disabilities and the peers have

common interests (Haring & Breen, 1992); the peer support arrangement will also benefit peers

academically or socially (Carter et al., 2011); and the peers have good social interaction skills

(Hughes et al., 2002). These choices of peers have all been based on teacher perceptions, and

researchers have not systematically examined how the composition of peers in a support group

may influence peer interactions of students with severe disabilities.

Investigations of the Roles of Students with Severe Disabilities and Peers

Within general education settings, the roles that are assigned to students with severe

disabilities and to peers, and the roles that are assumed during activities, may have bidirectional

impacts on peer interactions and how peers perceive students with severe disabilities. The studies

that have examined student roles have focused on peers. These studies have investigated the

impact of assigning peers to instructional roles on peer interaction outcomes (Carter et al., 2005;

Kennedy et al., 1997) and the associated benefits for peers in terms of status or personal

development of participating as a peer tutor (Carter et al., 2001). Only one study has explored the

roles students with severe disabilities and peers assumed within the context of school-based

activities. Kishi and Meyer (1994) examined the perceptions of peers regarding their roles in a

social contact program designed to promote peer interactions and friendships. The peers

participated in the program as elementary students, and the researchers found that when peers

were asked to describe their roles six years later, they recalled non-reciprocal teaching and care-giving roles that they assumed when interacting with students with disabilities more frequently than when describing their roles with other peers. Contrary to the intended outcome of the social contact program, none of the participating peers described sustaining friendships with the participating students with severe disabilities or currently having friendships with other students with severe disabilities.

Definitions of group roles. Group roles can be defined in terms of two main concepts: the position one assumes within a group based on one's social status and the functions one serves in a group (Hare, 1994; Keyton, 1994). Mu et al. (2000) examined the social status of students with severe disabilities through sociometric assessments using peer nominations. In this descriptive study, the social status of high school students with severe disabilities and peers were assessed to provide a normative view of peer interactions within general education classes compared to typically developing peers who were of average social status. Only half of the students with severe disabilities were rated as having average social status, two were rejected, and one was categorized as controversial.

Functional roles can be described as formal or informal (Hare, 1994). Formal roles are assigned, such as in studies of peer tutoring, in which peers are assigned a role of instructor, while students with severe disabilities are in an unequal role of learner (Carter et al., 2005; Cole, Vandercook, & Rynders, 1988; Kennedy et al., 1997; Ohtake, 2003). Conversely, informal roles are not assigned by an authority figure, such as an educator, but develop through the interactions within a group over a period of time (Benne & Sheats, 1948; Hare, 1994; Keyton, 1994).

Benne and Sheats (1948) proposed that members of a group assume informal roles based on three possible functions: *task completion roles, group building roles, or individualistic roles*.

These major types of functional informal roles impact the success of a group to accomplish tasks and the perceptions of value of the individual members of the group (Mudrack & Farrell, 1995). Task completion roles are assumed when members of a group work or collaborate to accomplish the task for the group. Group building roles are taken when members engage in behaviors that maintain or promote the interpersonal functioning of the group. Group members acquire individualistic roles when they engage in behavior that neither promotes achieving task goals or group building. These roles can be examined through observable behaviors, such as providing assistance, praising others, or complaining. Profiles can be developed by analyzing these observable behaviors to describe the roles assumed by individual group members (Benne & Sheats, 1948; Hare, 1994; Mudrack & Farrell, 1995).

Benne and Sheats described 26 specific roles that are included within the three major types of functional informal roles. For example, they describe one task completion role as a *coordinator*, which describes the role of a member who synthesizes ideas from the group or coordinates group activities. An *encourager* is described as a type of group building role, in which a member praises the contributions of others. A *recognition-seeker* is an example of an individualistic role, in which a group member brags about his or her own accomplishments or engages in challenging behavior to gain attention. Understanding the informal functional roles assumed by individuals in a group is important because these roles set the norms of the group's behavior and influence perceptions about who has made a contribution to the group (Hare, 1994).

Examining the roles assumed by group members during small group activities. The majority of research on roles within small groups has focused on adults (Keyton, 1994), but a small body of literature has examined the roles of children, including one study that included a high school student with disabilities (Belland et al., 2009). To examine whether informal roles

assumed by individuals influences the perceived value of group members, Mudrack and Farrell

(1995) administered a survey to undergraduate students who had worked in small groups

throughout a semester to complete a final class project. The survey asked the students to evaluate

the behavior of their fellow group members on 20 of the informal functional roles described by

Benne and Sheets (1948). The students were also asked to assign each member of the group a

hypothetical percentage of points based on their contribution and complete a measure of group

cohesion. Six of the roles described by Benne and Sheats were not included in the survey based

on pilot data that indicated that these roles were redundant or did not match the type of small

group activity conducted in this specific project. The researchers found that students who were

described by peers as assuming task completion roles were rated as more valuable than those

who assumed group building roles, or individualistic roles. The researchers suggest that the value

of certain functional informal role types may vary at different points in a group's work on a task,

and a limitation of this study includes the fact that the rating assigned for roles only occurred

after the task was finished. It may also be possible that group building roles would be recognized

as valued when individuals with severe disabilities perform them because physical abilities or

skills may limit a student with severe disabilities from assuming task completion roles, but their

contribution within group building roles may be possible.

Belland et al. (2009) conducted a case study to examine the roles each middle school

student assumed with a two-week problem-based learning (PBL) unit. The case centered on a

single group of students comprised of one student with a learning disability and attention deficit

hyperactivity disorder and two peers. The researchers video recorded the group during each class

session and conducted interviews with the students following completion of the PBL unit. The

researchers analyzed the video recorded interactions and interviews using a process of constant

comparison. The findings regarding roles were that each student assumed different roles for the project that served as a counterbalance to the weaknesses of each student and assisted the group to achieve their goals. The student with a disability served the role of a *task performer*. He had difficulty performing this role at times when he did not receive clear task directions. The student with a disability also served the role of a *tiebreaker* when the other two peers could not come to agreement. One peer served as the *task guidance provider* and as the *tutor* for the student with a disability. This peer provided concrete directions for tasks that the student with a disability could complete. The second peer served as the *group manager*, but not always effectively, as she did not readily accept input from the other members of the group. Although there were some apparent hierarchical differences in the roles assumed by the three students, all of the students felt that each person contributed and were valued members of the group.

Gaps in the roles of students with severe disabilities literature base. The literature available examining the roles of students with severe disabilities within instructional groups in general education settings is nonexistent at the high school level. Webster and Carter (2007) describe the need to conduct studies examining roles assumed by students with severe disabilities within inclusive settings that include systematic analyses of behaviors in order to classify these roles and the relationships between students with severe disabilities and peers. The roles assumed by students with severe disabilities need to be fully understood, as these roles might directly influence and/or be influenced by the peer interactions that occur within these contexts and have implications for the perceptions of peers toward the students with severe disabilities.

Inclusive Service-Learning: A Potential Context for Promoting Peer Interactions

Based on the review of the peer interaction intervention literature, it is evident that there is a need for more studies investigating methods for promoting interactions within the context of

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high schools for students with severe disabilities. For students with severe disabilities who are preparing to transition to adult life, maximizing opportunities to interact with peers in ways that develop reciprocal relationships is essential. Service-learning is one potential way to promote peer interactions within general education settings and to provide opportunities for students to assume valued roles while working with peers. Service-learning is a form of teaching that engages students in performing a service project that benefits their school or community while simultaneously addressing the students' curriculum goals. Service-learning differs from community service or volunteering because it is directly tied to the general education curriculum or IEP objectives (Gent & Gurecka, 1998). This teaching method is used in nearly half of all high schools in the United States (Scales & Roehlkepartain, 2004). During inclusive service-learning, students with and without disabilities participate together as equal partners to complete service projects while addressing different curriculum goals (Dymond et al., 2011).

There are several reasons that inclusive service-learning should be examined as a potential context for promoting peer interactions for students with severe disabilities. Many of the peer interaction interventions have features that are already included within the structure of inclusive service-learning, such as small group instructional arrangements that promote collaboration and interdependence. Additionally, service-learning does not primarily rely on traditional lecture-based instruction, which tends to limit peer interaction opportunities. Service-learning can also provide a context to incorporate peer-focused practices, such as peer supports that may reduce reliance on individually assigned paraprofessionals for students with severe disabilities while increasing peer interactions (Carter et al., 2012). The peer interactions that occur within the context of service-learning and the roles students with severe disabilities assume may assist in improving the perceptions of peers toward students with severe disabilities. This

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may also provide opportunities for friendships to develop between students with severe disabilities and provide peers with an awareness of the contributions students with severe disabilities can make in their community.

Components of service-learning. The process for implementing a service-learning project includes four to six components that are commonly described in the literature: investigation, preparation/planning, action, reflection, evaluation, and celebration (Billig, 2011; Dymond, Renzaglia, & Chun, 2007; 2008; Gent, 2009; Gent & Gurecka, 1998; Kaye, 2004; Kleinert et al., 2004; National Service-Learning Clearinghouse, n.d. b; RMC Research Corporation; 2009). In the investigation phase, students collect data about a need in their community (Billig, 2011). During the planning/preparation phase, students collaborate with a community partner to determine how service will be implemented, what skills they will need, and how performing the service will address learning objectives (Gent, 2009). Students work together to complete the service tasks within the action phase of the project (Kaye, 2004). Ideally, reflection occurs throughout the service-learning process and involves students making connections between their engagement in service and the learning objectives of the project (Billig, 2011). Evaluation refers to assessing both student learning and the impact of the service (Dymond et al., 2008; Kleinert et al., 2004). The final component of service learning is celebration. During this last phase, the students and community partners are recognized for their contributions and accomplishments (Gent & Gurecka, 1998).

Proposed benefits of inclusive service-learning on social outcomes. Service-learning has been endorsed as a means to promote positive social outcomes for students with disabilities (Carter et al., 2012; Gent & Gurecka, 1998; Kleinert et al., 2004; Kluth, 2000; O'Connor, 2009). Inclusive service-learning can provide a means to promote social interaction and develop

friendships (Brill, 1994). Activities during service-learning projects give students with and without disabilities something to discuss and share. Brill (1994) noted the power of engaging students with disabilities in service-learning in their communities by stating, "service-learning provides an avenue through which students can claim their role as citizens, improve their self-images and interact in their communities with dignity" (p. 369). By engaging in service-learning collaboratively with peers, students with severe disabilities can diminish stereotypes that people with disabilities are only recipients of service instead of being capable of providing meaningful support to others (Gent & Gurecka, 2001). Carter et al. (2012) also suggest that service-learning can provide opportunities for students with severe disabilities to assume valued roles while working with peers.

Investigations of service-learning impact on social outcomes. Methodological approaches for studies investigating social outcomes of students with disabilities participating in service-learning included teacher surveys (Brill, 1994); pre and post self-rating scales (Jensen & Burr, 2006; McCarty & Hazelkorn, 1997), school data reports (Frey, 2003), ethnographic interviews (Muscott & O'Brien, 1999), and student observations (Jensen & Burr, 2006).

From the available research findings, researchers suggest that service-learning that involves students with disabilities can be attributed to several positive outcomes in social development (Brill, 1994; Frey, 2003; McCarty & Hazelkorn, 1997; Muscott & O'Brien, 1999). Specifically, researchers found through observations, school reports, and/or teachers' reports that students with disabilities who participate in service-learning improve their behavior (Brill, 1994; Frey, 2003; Jensen & Burr, 2006); develop relationships with peers and widen their social networks (Brill, 1994); improve their ability to cooperate with peers (Frey, 2003); and increase their levels of empathy for others (Brill, 1994; McCarty & Hazelkorn, 1997). Self-reports by

students with disabilities indicate that participation in service-learning increased their ability to work cooperatively (Frey, 2003; Muscott & O'Brien, 1999).

Service-learning: Peer interactions and roles of students with severe disabilities.

Although numerous studies have been conducted to examine service-learning (Billig, 2000), only one study exists that has investigated peer interactions between students with and without disabilities within the context of inclusive service-learning (Chun, 2009). Using momentary time sampling and a partial interval observation procedure (10-second observe, 10-second record), Chun (2009) found that students with severe disabilities engaged in inclusive service learning had more social interactions while students without disabilities had more task related interactions. Additionally, overall peer interactions of students with disabilities and without disabilities increased during service-learning, but peer interactions increased to a greater extent for students without disabilities compared to the interactions involving students with disabilities. During this study, some of the peers were assigned formal roles as team leaders to small groups of students with and without disabilities engaged in the service-learning activities. Data was not collected on the impact of assigning roles during the service-learning project, and the researcher did not describe any informal functional roles that emerged for students with severe disabilities or the peers in their group as a result of participating in the project.

Two other studies include descriptions of peer interactions or roles of high school students with severe disabilities and peers within the context of inclusive service-learning, although peer interactions was not the focus of either study (Brill, 1994; Burns et al., 1999). The findings from Brill (1994) describe positive outcomes related to peer interactions based on teachers' perceptions of the interactions of students with severe disabilities participating in inclusive service-learning. These outcomes included increased initiations directed toward peers,

increased turn taking, and increased use of social amenities. The teachers also reported that peers perceived the students with severe disabilities as valuable members of the school community following service-learning activities. The main focus of the Burns et al. study was to determine the differential effects of formal roles of students with severe disabilities in service-learning as either collaborators with peers or recipients of service, and how these roles while participating in service-learning impacted changes in attitudes of peers. The researchers found that the peers' attitudes improved toward students with severe disabilities when the students with severe disabilities worked alongside their peers, but no change in attitude occurred when the students with severe disabilities were the recipients of service. Gent and Gurecka (2001) echoed the concern that service-learning needs to provide opportunities for students with disabilities to be viewed as equal contributing members during service-learning activities. When students with disabilities are in the service recipient role, the authors suggest it only reinforces stereotypes that people with disabilities are dependent and incapable.

Statement of the Problem

A considerable need exists to develop peer interaction interventions that involve peers and that alter instructional context variables to promote peer interactions in general education classes at the high school level (Carter et al., 2010). The most frequently investigated strategy at the high school level for increasing peer interactions involves training peers to serve as peer supports, often in a hierarchical role of a peer tutor. While these interventions may be effective in increasing peer interactions within that specific instructional context, they do not necessarily support outcomes aimed at developing reciprocal relationships. Although several researchers have also examined the nature of peer interactions and instructional context variables during typical instruction, which often was lecture-based and consisted of large group instruction

(Carter et al., 2005; Carter et al., 2008; Mu et al., 2000), there is limited research examining the nature of peer interactions during collaborative, small group instruction or during inclusive service-learning activities (Chun, 2009). Service-learning is a teaching method that differs considerably in that the role of teachers is to facilitate the participation of students in the process, and the learning activities are experiential, with a goal of providing a service to a community partner. Therefore, adult physical proximity, adult prompting, the type of task, and other instructional context variables may have different impacts on peer interactions within service-learning compared to typical high school instruction.

Also missing from the literature are investigations that systematically examine the roles students with severe disabilities assume within the context of the service-learning activities. The limited research available on roles within instructional activities has primarily focused on the roles assumed by peers with respect to students with severe disabilities. Little is known about the most effective way to select peers to work with students with severe disabilities during small group activities, with most studies describing the manner for selecting peers as based on peers who volunteer or based on general education teachers selecting peers who they think will be supportive. If peers are unable to perceive students with severe disabilities as having a shared identity as fellow high school students who are capable of making a contribution to others, there is little hope that peers will accept and embrace students with severe disabilities as future community members, friends, or colleagues.

Gaining a greater understanding of peer interactions and roles of students with severe disabilities within these contexts would assist in structuring service-learning activities that promote the greatest frequency of peer interactions and ensure students with severe disabilities are able to assume valued roles within these activities. The proposed study will extend the

research conducted by Chun (2009) by investigating how students with severe disabilities interact with peers and adults and the roles students with severe disabilities assume during inclusive service-learning. It will also address gaps in the literature by examining the influence of contextual factors within inclusive service-learning on peer interactions of students with severe disabilities. These contextual factors include: (a) the composition of groups assigned to work together during inclusive service-learning (a student with severe disabilities and two peers); (b) the type of tasks students engage in during the project (independent or collaborative tasks); (c) adult physical proximity to the student with a severe disability; and (d) adult prompting directed toward a peer and/or a student with a severe disability to promote interaction. To provide a more thorough understanding of peer interactions and roles assumed by students with severe disabilities, a mixed methods approach will be implemented in this investigation and will include data collection through a variety of sources that will allow for examinations of observable behaviors and the perceptions of peers and educators through observations, interviews, and focus groups.

Chapter 3

Methods

The purpose of this study was to examine the interactions of students with severe disabilities with peers and adults, the relationship between specific contextual factors and peer interactions, and the roles students with severe disabilities assumed within the context of inclusive service-learning. Data were collected at three high schools using document reviews, a survey, observations, interviews, and focus groups, and involved 37 days in the field, over a period of twelve weeks. The research questions that guided this study are:

- How do high school students with severe disabilities interact with peers and adults during inclusive service-learning?

- How are the following contextual factors: (a) the composition of focal groups (students grouped together by sharing or not sharing common interests and/or a willingness to help classmates); (b) type of task (task is being completed collaboratively, independently, or no task is being performed); (c) adult physical proximity (within 3 feet of the focal student versus more than 3 feet from the focal student), and (d) adult prompting (verbally directing a peer or the focal student to interact or no verbal prompt to interact) related to the peer interactions of students with severe disabilities during inclusive service-learning?

- What roles do high school students with severe disabilities assume during inclusive service-learning?

A mixed methods case study design was implemented to describe the interactions that occurred, the relationship between contextual factors and peer interactions, and the focal student roles that emerged throughout an inclusive service-learning project. The mixed methods paradigm stance that guided the development and implementation of this investigation is that of

pragmatism (Greene, 2007). Within this paradigm, I recognize the existence of observable

behaviors that can be used to define peer interactions and contextual factors, and I also

acknowledge the emergent aspect of human interactions that are constructed through the

perceptions and understandings of the participants and observers. Therefore, I view the findings

of this investigation through multiple lenses. The criteria used to make decisions regarding the

design of this investigation were based on practical knowledge of inclusive service-learning and

the complexity of interactions involving students with severe disabilities, peers, and adults.

Greene, Caracelli, and Graham (1989) proposed that there are five reasons that

researchers employ mixed methods designs. The purpose of complementarity for mixing

methods was considered within this study. Within a mixed method study designed for

complementarity, quantitative and qualitative methods "are used to measure overlapping but also

different facets of a phenomenon yielding enriched, elaborated understanding of the

phenomenon" (Greene, Caracelli, & Graham, 1989). This study seek to create a greater

understanding of the phenomenon of peer interactions and roles of students with severe

disabilities within inclusive service-learning through observed behaviors of the participants and

through the perspectives of the peer and adults involved.

A mixed methods case study approach was an ideal method to investigate the questions

of this research because it provided the opportunity to describe the type and frequency of

interactions of students with severe disabilities that occurred during inclusive service-learning

through observable behaviors of the participants and the perceptions of the adults and peers

involved. Additionally, this approach allowed for an investigation of the roles students with

severe disabilities assumed during inclusive service-learning through an examination of the

content of interactions and the perceptions of peers, art teachers, and the preservice teachers who

facilitated the project. Moss and Sandiford (2011) emphasized that mixed methods approaches are particularly suited to capturing the process and impact of K-12 service-learning because of the stated or unstated expectation of addressing the affective domain within service-learning. The use of both quantitative and qualitative data within a case study design can provide a more complete picture by providing both breadth and depth of understanding (Creswell & Plano Clark, 2007).

Both inclusive education and service-learning are complex processes, and the contextual factors involved make each situation unique. Case studies attempt to provide a holistic understanding that can contribute to clarifying the complexities involved in a phenomenon (Evers & van Staa, 2010; Stake, 1995). The four cases in this investigation were each centered on a focal student with severe disabilities. The findings of this study include two detailed case descriptions and two case description summaries that include the peer and adult interactions of the four selected focal students with severe disabilities. The case descriptions include the frequency and manner in which focal students with severe disabilities interacted with peers and adults, the relationship between specific contextual factors and peer interactions, and the roles assumed by focal students with severe disabilities as part of a focal group within the inclusive service-learning project.

Researcher Identity

When conducting qualitative research, my own background and experience as a high school special education teacher and involvement in the service-learning project that was implemented by the participants were potential sources of strength and bias during data collection and analysis. My familiarity with the service-learning project in this investigation aided in the data collection and analysis by having a background knowledge regarding how the

project was developed and implemented. This was also a source of potential bias because my own beliefs and experiences may have impacted the data collected and how it was analyzed. To limit potential bias, my assumptions need to be explicitly stated and carefully examined (Maxwell, 2005). Therefore, I will make explicit my prior experiences relevant to this study, and my assumptions regarding inclusive service-learning and the involvement of students with severe disabilities and typically developing peers. I also continued to reflect on these assumptions throughout the research process.

Brantlinger, Jimenez, Klingner, Pugach, and Richardson (2005) suggest that to do qualitative research well, the researcher must have experience with the topic. As a special education teacher for eight years, I taught students who had moderate to severe intellectual disabilities. I also wrote and received a $10,000 grant through Learn and Serve Arizona to develop an inclusive service-learning program at the high school. My students with severe disabilities engaged in service-learning projects with peers that were part of a media arts general education course. Through university coursework, I learned about service-learning and how it could offer a means for providing inclusive community-based instruction in functional and academic skills for students with severe disabilities and their peers without disabilities.

I also have a long history of involvement in service, starting as a child, volunteering with the Girl Scouts at assistive living communities and food banks during the holidays. My involvement in service continued in high school and college through my participation in service clubs. My volunteerism as an adult includes working on the Ben's Bells Project, a community arts project created in 2002 following the death of Ben Packard. Ben was the two-year-old son of my friend and colleague, Jeannette Mare. When I became a teacher, I asked Ms. Mare to speak with my students and their peers without disabilities about the project and have them participate

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in helping to create some of the art pieces for the project. I continued to involve my students in the project once or twice per year to provide them with an opportunity to give back to their community while engaging in an enjoyable art activity.

During my doctoral program, I worked with my advisor to develop the inclusive service-learning project that is part of this study by utilizing the Ben's Bells project. My advisor and I were awarded two grants through Action Research Illinois, a unit in the College of Fine and Applied Arts at the University of Illinois that provides funding to develop new service-learning courses. Our funders, through Action Research Illinois, required that the service-learning course be offered for three semesters. For two consecutive spring semesters, my advisor and I co-taught a service-learning course for preservice teachers in which they implemented the Ben's Bells project with art classes at the three high schools that were involved in this study. In addition to serving as one of the instructors for the course, I was also involved in several other aspects of the service-learning project. I worked with Jeannette Mare, the founder of Ben's Bells, to gain approval to establish a chapter of Ben's Bells in Illinois and permission to conduct research involving the project. I also coordinated the implementation of the Ben's Bells service-learning project, including establishing relationships with the teachers involved and collaborating with these teachers to schedule groups of preservice teachers to come once per week, for six weeks during each semester. I developed lesson plans for the service-learning project that were adapted from the *Kind Kids* character education materials available through Ben's Bells to be implemented by the preservice teachers each week of the project. I was also responsible for purchasing and managing the materials used for the project. Additionally, I implemented monthly community engagement events for Ben's Bells, in which anyone from the community is invited to participate in the project.

These experiences have led me to develop certain assumptions about inclusive service-learning that involves students with severe disabilities and their peers without disabilities and the Ben's Bells Project. One of my main assumptions in conducting this research was that although there may be challenges, I think that students with severe disabilities can successfully participate in inclusive service-learning. Through their involvement, students with severe disabilities may assume new and elevated roles among their peers. I also believe the Ben's Bells Project is beneficial for students with and without disabilities because the project emphasizes creating communities focused on intentional kindness. This bias may have influenced my data collection and analysis because I might have focused on the positive peer interactions that occurred within the Ben's Bells service-learning project and minimized negative aspects. To minimize this potential area of bias, quantitative measures were included along with multiple sources of qualitative data, which provided for an opportunity to seek for convergence of the findings and helped to ensure that the interpretations of these findings reflect observable behaviors and the participants' perceptions. This bias may have also caused me to unintentionally ask leading questions during interviews because of my perspectives on the intended outcomes of the project and the involvement of the students with and without disabilities. By carefully developing interview guides using an open-ended interview format, potential bias from leading questions was minimized (Patton, 1980).

My substantial involvement in the Ben's Bells Project might have also negatively impacted data collection due to my prior relationship with some of the participants. Efforts were taken to minimize the impact, including changing my role in the university course and limiting my role to non-participant observer during observations. Serving as one of the university course instructors during this study might have caused a potential conflict and negatively impacted data

collection; therefore, during the study I did not co-teach the course. If I had been an instructor, the preservice teachers may have felt uncomfortable speaking candidly during interviews about their experience and perceptions. Instead, I was presented as a consultant to the preservice teachers. I provided preservice teachers demonstrations of the process of creating Ben's Bells and assisted in materials management. I did not present course lectures or grade course assignments.

To minimize any potential negative impact on data collection, I had minimal interaction during the project with the high school students, with my involvement being limited to that of a non-participant observer. I developed professional relationships with the collaborating teachers from the high schools over the past two years while planning and implementing the project. During that time, I solicited feedback from the collaborating teachers about the implementation of the project, which they freely provided both positive and negative comments and suggestions. I believe the rapport I developed with these teachers served to elicit in-depth responses regarding their perceptions of student interactions and roles.

To ensure that these assumptions remained at a conscious level during data analysis, I repeatedly reflected on these biases and planned to modify my data analysis if needed. I maintained a log of my reflections throughout the data collection and analysis process. Entries were made following each data collection opportunity and enabled tracking of my thinking of any issues related to these biases. These biases were able to be minimized throughout the data collection and analysis process and did not appear to have an impact. Additionally, implementation of interobserver reliability measures for quantitative data from both of the live and video recorded data and reviews of coding for qualitative data assisted in minimizing any effects of potential biases.

Setting

  Schools. Using Patton's (1980) strategy for purposeful sampling, three public high schools (Hill Valley High School, Main North High School, and San Dimas High School) located in small urban cities in Illinois were selected. I selected the three schools because each has a history of implementing inclusive service-learning that involves students with severe disabilities and typically developing peers. Each school had implemented the Ben's Bells service-learning project over the past two years. Holding the service-learning project constant across the three schools assisted in examining peer interactions and the contextual factors in each school. One of the schools, Main North High School, also has a history of inclusive service-learning projects being implemented in other non-art elective classes.

  The three high schools all had large, diverse student populations and were considered high need schools due to the large percentage of their student populations that qualified as low income. Students were enrolled in ninth through twelfth grade at all three high schools. See Table 1 and Table 2 for general student demographic information for each school.

  The focus of this study was on high school students with severe disabilities, which can be an ambiguous category of individuals with disabilities. It is difficult to specify who these students are from demographic school information because they do not constitute their own reported disability category. Students with severe disabilities are often described as a subset of students who qualify for special education services from the categories of intellectual disability, autism, and multiple disabilities (Carter et al., 2001). For the purpose of this study, students with severe disabilities (i.e., intellectual disability, autism, multiple disabilities) were selected who had moderate to profound intellectual disabilities and were eligible for the Illinois Alternate Assessment. This allowed for selection of students with severe disabilities that had the most

significant disabilities.

Hill Valley High School and Main North High School were two of the three high schools in the Longmeadow Unified School District (LUSD), which also consisted of three middle schools, 11 elementary schools, and one early childhood center. Total enrollment for LUSD was 9,407 students. Special education services were provided through district personnel. Hill Valley High School employed 15 special education teachers, with two of these teachers responsible for providing programs for students with severe disabilities. Main North High School employed 13 special education teachers, with one of these teachers responsible for students with severe disabilities.

San Dimas High School was the only school in the San Dimas School District. Special education services were provided to students through either district personnel or through a rural county cooperative that coordinated and provided services to students with disabilities in 11 districts. There were 10 special education teachers on staff at San Dimas High School, with two of these teachers responsible for students with severe disabilities. One special education teacher from the cooperative was responsible for the students with the most significant support needs at San Dimas High School.

Educational programs for the students with severe disabilities at all three schools were typically provided in self-contained settings with community-based instruction or vocational training provided for part of the school day. At all three schools, students with severe disabilities were typically included in one or two general education classes per day. Most often these classes were electives or physical education. Data from the Illinois State Board of Education about the percentage of students educated in the LUSD and San Dimas High School who receive services under the disability categories of intellectual disability, autism, and multiple disabilities are

provided in Table 3. Table 4 illustrates the percentage of time students with severe disabilities were educated in general education settings by school district.

      Service-learning project. The inclusive service-learning project implemented at the three high schools was called the Ben's Bells Project. In 2002, a mother who had suddenly lost her son, Ben, to an illness, created the Ben's Bells Project. She found that simple acts of kindness by friends and strangers helped her through her overwhelming grief. Her mission is to share a message of the power of intentional kindness with others through a project that honors her son. That idea has become the community art project now known as Ben's Bells, in which people contribute by making pieces of ceramic wind chimes. By the time one wind chime, or Ben's Bell, is completed, at least 10 people will have contributed to creating it. Ben's Bells are then placed in public places all over a community for people to randomly find, take home, and pass on the message of intentional kindness. Each Ben's Bell comes with a tag describing the mission of the project, along with the website address, www.bensbells.org. Individuals who find a Ben's Bell can go to the website to share their stories of kindness and the impact of finding a Ben's Bell. A photograph of Ben's Bells wind chimes is displayed in *Figure 1*.

      My advisor and I first attempted to bring the Ben's Bells Project to the University of Illinois through three different grant applications, including grants from private foundations and one university sponsored grant. These three grant proposals focused on creating collaborations with local high schools to implement Ben's Bells as an inclusive service-learning project that would provide opportunities to conduct research. These grant proposal submissions were rejected. A forth grant application was submitted to Action Research Illinois, a unit in the College of Fine and Applied Arts at the University of Illinois. This grant proposal was awarded. The proposal focused on developing a university service-learning course for preservice teachers.

The course also included collaboration with three high schools to implement Ben's Bells as an inclusive service-learning project and provided opportunities for research.

Preservice teachers who enrolled in the course called *High School Service-Learning* engaged in a variety of activities to achieve the course objectives. These objectives included:

- Identify the core components of service-learning pedagogy.

- Implement an inclusive service-learning project with collaborators from local high schools.

- Identify and implement supports that promote successful participation of students with severe disabilities in service-learning.

- Use writing and multimedia to critically reflect on the impact of the service-learning project, class readings, and discussions on inclusive practices and service-learning pedagogy.

During the course, the preservice teachers participated in class lectures, discussion, and small group activities designed to further their understanding about service-learning pedagogy, the potential benefits of inclusive service-learning, and the relevant knowledge and skills for supporting students with severe disabilities during service-learning projects. The preservice teachers also spent part of each class session preparing for their role in the Ben's Bells service-learning project by reviewing lesson plans (see Appendix A for an example) and practicing the art skills that were needed during the service-learning project. The preservice teachers also reflected on their experiences and made connections to the course learning objectives through in-class discussions and a written journal that they individually submitted weekly.

The Ben's Bells Project provided an opportunity for preservice teachers to acquire hands-on knowledge regarding the pedagogy of inclusive service-learning. The preservice teachers'

role in the project was to facilitate the implementation of the project by providing the high school students instruction in the process of creating Ben's Bells, supporting the students with and without disabilities during the project, and leading the students in discussions focused on the mission of the project related to intentional kindness. After three university class sessions learning about the basic components of service-learning and the history, mission, and the beginning steps in the process of creating Ben's Bells, the preservice teachers were assigned to teams of two to five, to facilitate the project at a local high school. Each team of preservice teachers implemented the project in a single art class, once per week, for six weeks. Two to six students with severe disabilities were invited to join each art class for the project and to work as collaborators with their peers to provide service to the community.

The high school students with and without disabilities learned knowledge and skills related to art, in the area of ceramics, and character education focused on kindness through their participation in Ben's Bells and during in-class reflection activities. Over a period of six weeks, the high school students worked together once per week under the guidance of the preservice teachers to create approximately 300 Ben's Bells. During the project, the students with and without disabilities worked collaboratively in small groups to create the Ben's Bells wind chimes and then distributed them in the community. Following verbal instructions and modeling by the preservice teachers during each session, the students completed a variety of tasks throughout the project, including forming clay beads, rolling out clay slabs to cut out centerpieces, glazing beads and centerpieces, selecting color coordinated beads and centerpieces, and assembling the wind chimes. The students brainstormed to select locations to distribute the Ben's Bells in their communities. During the distributions, students used maps to locate areas marked for placing the Ben's Bells. They hung the wind chimes in public places, such as parks, hospitals, community

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centers, schools, and shopping center parking lots. Following the distribution, the preservice teachers and high school students participated in a celebration activity and final reflection in each of their art classes. Detailed descriptions of the activities the students engaged in during each week of the project, as well as the art and kindness curriculum addressed are provided in Table 5.

Participants

The participants in this study included students with severe disabilities, peers, art teachers, paraprofessionals, special education teachers, and university preservice teachers.

Students with severe disabilities. Four students with severe disabilities were purposefully selected (Patton, 2002). One student attended, Hill Valley High School, one student attended Main North High School, and two students attended San Dimas High School. The two San Dimas students were each in different art classes for the inclusive service-learning project. For this study, a student with severe disabilities was defined as a student with a moderate to profound intellectual disability who met the eligibility criteria to take the Illinois Alternate Assessment (IAA). Even within the category of students with severe disabilities that involve a significant cognitive impairment, there is heterogeneity. Students may have co-occurring disabilities, such as autism or cerebral palsy, that result in specific support or learning needs. These needs may be related to mobility, communication, and/or behavior supports. I selected one focal student from each art class who had the greatest support needs of all of the students with severe disabilities invited to participate in the service-learning project who were deemed eligible and from whom parental consent was obtained. Purposefully sampling students with the most significant support needs helped to illuminate the roles and interactions of students with severe disabilities within the project from each participating class and school by narrowing the focus to

students who had the potential to have the greatest challenges interacting with peers and adults during the project.

Peers. Eight high school students without severe disabilities who participated in the inclusive service-learning project were purposefully selected. Two peers from each art class were selected from a total of four classes. The participating students from each school worked in assigned groups of three (two peers and one focal student with severe disabilities). Only one focal group was selected from each art class.

Prior to selecting the groups for the service-learning project, including the focal group, the results of the Student Free Time Interests and Activities Survey (see Appendix B) was reviewed to match students with common interests. This survey was administered prior to the implementation of the project. Each selected focal group consisted of three students: (a) one focal student with severe disabilities that had the most significant support needs of the students in that particular class and whose parents consented to their child's participation in the study, (b) a peer that had an interest or activity (e.g. sports, music, or leisure activity) in common with the focal student with severe disabilities, and (c) a second peer that also had the same common interest or activity, or a different common interest with the focal student with severe disabilities. In two focal groups, both peers also responded that he or she enjoys helping other classmates. In the other two focal groups, one peer responded that he or she enjoys helping other classmates, and the other peer disagreed with this statement on the survey. If more than two peers were eligible to participate as members of the focal group, then I selected the two peers based on the survey results, as the peers having the greatest number of interests in common with the focal student with severe disabilities and for whom parental consent was obtained. I also asked the art teachers whether the selected students had any issues with absenteeism. None of the selected

students were reported by their art teacher to have an issue with absenteeism.

High school art teachers. Each art teacher involved with implementing the Ben's Bells service-learning project was invited to participate in the study. Three art teachers were selected to participate, with one art teacher participating from each of the three high schools. The art teacher at San Dimas High School taught both participating art classes. The art teachers collaborated with the special education teachers to have the students with severe disabilities join the art classes for the project. The art teachers also worked with the research team to support the implementation of the service-learning project and provide assistance to the preservice teachers and students as needed during the project.

Paraprofessionals and special education teachers. Four paraprofessionals and two special education teachers who were physically present in the art classes during the service-learning project were invited to participate. The paraprofessionals and special education teachers observed activities during the art class and at times provided support to the students with severe disabilities to engage in activities. Between one and two paraprofessionals were present in each class at Hill Valley High School and Main North High School during each session of the project. One paraprofessional was present at San Dimas High School in one of the participating art classes. One special education teacher was present during part of the sessions at Main North High School, and another special education teacher was present during part of the sessions in one of the art classes at San Dimas High School.

Preservice teachers. The preservice teachers who were enrolled in the university service-learning course and were assigned to the participating art classes were invited to participate in the study (n=10). These individuals facilitated the inclusive service-learning project at the high schools. The preservice teachers were all special education majors who were either

juniors or first year master's students, pursuing their initial special education teaching certification. None of the preservice teachers had participated in formal university sponsored practicum experience. They were all in their second of five semesters of special education coursework. They were responsible for facilitating the participation of the high school students with and without disabilities in the Ben's Bells service-learning project.

Instrumentation

The following instruments were developed: (a) document review form, (b) student survey, (c) two observation forms, (d) two individual interview guides, and (e) focus group interview guide.

Document review form. The Document Review Form was developed to record information relevant to the background of the participants with severe disabilities from the IEP (see Appendix C). Information gathered included the student's primary and secondary disability category; eligibility for the Illinois Alternate Assessment; objectives related to social or communication skills; formal assessments of IQ, adaptive behavior, and communication; current level of academic and functional performance, including communication skills; and his or her support needs. Patton (1980) asserts that using a variety of sources "can build on the strengths of each type of data collection while minimizing the weaknesses of any single approach" (p.158). By gathering information related to the category of disability, current level of performance, and support needs for each participating student with severe disabilities, this provided for a greater understanding of the focal students and how these factors might be associated with the roles the focal students assumed and their interactions with peers and adults during the service-learning project.

Student free time interests and activities survey. A survey was developed to collect data from the students enrolled in each participating art class regarding their demographics, leisure activities, interests, and attitudes toward helping fellow classmates (see Appendix B). The survey was developed based on a review of literature regarding leisure activities of adolescents that were assessed through self-report surveys (Fawcett, 2007; Guo, Reeder, McGee, & Darling, 2011; Henry, 1997; Scott & Willits, 1998). The survey was administered for three purposes. The first purpose was to gather information that was used to group students with and without disabilities by common interest areas or leisure activity for the service-learning project. The second purpose of the survey was to select at least one peer for each focal group, who reported enjoying helping other classmates, in addition to having a common interest. The third purpose was to acquire general demographic information about the peers in each participating focal group for the case description. The survey was piloted with five adolescents to assess the clarity of the questions and to receive feedback regarding the content validity of the questions. Based on the pilot survey feedback, small changes in wording were made to the survey questions.

Observation forms. Two observation forms (see Appendices D and E) were developed to record data from both video recorded and live observations of each focal group. The observation data collection forms were developed based on a review of the literature on peer interactions of students with severe disabilities, service-learning, and guidelines from previous studies that implemented live and video recorded data collection. The purpose of the observation forms was to systematically focus attention on gathering the most information-rich data associated with the research questions. The advantage of using video recording to gather the data is that the events are available for repeated analysis and more elaborate observational codes can be used. The disadvantage of using video recording is that not all events occurring in a setting

can be captured on video (Kennedy, 2005). The live recording of specific events not captured on video provided supplementary information to provide a more complete picture of the interactions of the focal students with severe disabilities.

The Video Observation Form (see Appendix D) provided a format to record data collected from video recordings of the focal group during the service-learning project. The Video Observation Form included the following categories: (a) initiation; (b) response; (c) interaction type (social or task related); (d) adult physical proximity (within 3 feet of the focal student versus more than 3 feet from the focal student); (e) adult prompting (verbally directing a peer or the focal student to interact or no verbal prompt to interact); (f) task type (task is being completed collaboratively, independently, or no task is being performed); and (g) common interest (the interaction involves the focal group's common interest or does not involve the common interest). (See Table 6 for a list of operational definitions.)

The Video Observation Form was created within a software application called VCode™. The form created through this application enabled 10-second interval recording for each of the categories coded. A recording interval of 10 seconds is commonly used in research on peer interactions (Boyd et al., 2008; Greenwood et al., 1984; Johnson, Johnson, Putnam, & Rynders, 1989; Mu et al., 2000; Rotholz, Kamps, & Greenwood, 1989). The VCode™ software enables observers to play back a video recording either continuously or with pauses at specified intervals to allow for coding (Hailpern, Karahalios, Halle, DeThorne, & Coletto, 2008; 2009).

Data recording using the Video Observation Form was piloted prior to actual data collection using seven, 10-minute video recorded sessions of the inclusive service-learning project from implementation of the project prior to the study being conducted. Two observers discussed the coding definitions and then independently practiced recording the 10-second

interval data using VCode™ for three of the video recorded sessions. Reliability was determined by calculating point-by-point agreement for each category using the accompanying VData™ software. This software enables automatic calculation of point-by-point agreement between a primary and secondary observer (Hailpern et al., 2009). The observers were allowed to replay each 10-second video segment as many times as they wished while coding (Grenot-Scheyer, 1994). Interobserver agreement (IOA) was calculated by dividing the number of agreements for both occurrence and nonoccurrence of the observers on each specific interval in which a behavior is recorded by the number of agreements plus disagreements, multiplied by 100 to form a percentage (Kazdin, 2011). Using a point-by-point agreement method is more precise than a frequency ratio or total agreement approach, which evaluates agreement on totals (Kazdin, 2011).

For this study, 80% point-by-point IOA was the criterion level. An IOA of 80% is typically considered a standard acceptable level in the literature (Kazdin, 2011). After the first three practice videos were coded, the two observers reviewed the operational definitions of behaviors and coding procedures. The same procedure were repeated with additional 10-minute videos until the coding for three consecutive videos reached the 80% agreement or greater criterion level for each of the selected behaviors. Once the IOA for each of the selected behaviors reached 80% agreement or greater for three consecutive videos from the pilot, then the primary observer began coding observations for the study data.

The Live Observation Form (see Appendix E) provided a format to record live data regarding relevant events that occurred out of the video recording frame focused on the selected focal group during each 50-minute observation session. The data recorded on this form included a format to record 10-second interval data. The form included categories to record interactions at

times when the focal student with severe disabilities moved away from his or her focal group's table and out of the camera frame. These categories included: (a) initiation; (b) response; (c) interaction type (social or task related); (d) adult physical proximity (within 3 feet of the focal student versus more than 3 feet from the focal student); and (e) adult prompting (verbally directing a peer or the focal student to interact or no verbal prompt to interact). The same operational definitions that were used for the categories on the Video Observation Form were also used on the Live Observation Form (see Table 6).

Fewer categories of data were collected for the live observation data than the video recorded observations for two reasons. The first reason is that the focus of the video recorded observations was to collect data regarding how the focal students with severe disabilities interacted with peers and adults while working at the table with their groups. The video continued recording the peers that remained at the table, but were not coded or analyzed because the data did not include the focal student with severe disabilities who left the table. The second reason for not including all of the categories of data on the live recording form is for the sake of maintaining the accuracy of coding. Recording the additional categories of task type and common interest would make it difficult to ensure accurate recording of the remaining categories, as the live recording used a 10-second observe procedure, followed by a 10-second record procedure, that did not provide for repeated viewings, which was possible from the video recordings.

The Live Observation Form was loaded onto an iPad2™ using PDF annotation software called PDF Expert™. During the observation, I listened to an audio recording through ear buds that signaled the end of each interval and when to record. The recording was played through an application called Seconds Pro™ from the same iPad2™ that displayed the Live Observation

Form. The form was completed on the iPad2™ using a stylus to record the codes for each interval. This system was piloted prior to actual data collection during at 10 observation periods, each lasting 20 minutes within different art classes at each of the schools where the study was later conducted. A student in each class, regardless of disability status, was selected as the focal student during the pilot sessions. The researcher and a second observer piloted the Live Observation Form until an 80% point-by-point IOA was reached for each behavior category for three consecutive sessions (Carter et al., 2005). To sync the timing of the audio recording for the researcher and the second observer, the researcher tapped the start button within the Seconds Pro™ application on both iPad2™ devices simultaneously. The recording allowed for a 30-second prepare time before the first 10-second observing interval. Additionally, at least one informal observation of each of the focal students with severe disabilities was conducted prior to the service-learning project to make note of how the focal student typically communicated to assist in accurately recording instances of initiations and responses. The Live Observation Form was not used during these informal observations; instead descriptive notes were written to review during training.

Interview guides. Interview guides were developed to collect data from peers and art teachers regarding their perceptions of the roles focal students assumed during service-learning and the nature of their interactions. Preliminary interview guides (see Appendices F-G) were developed based on the literature in the areas of peer interactions and interventions for students with severe disabilities and small group research. Additional probing questions were included in the interview guides for responses that needed further clarification or more depth (Patton, 1980). Probe questions also served to limit potential bias by carefully wording questions to avoid leading participants.

The preservice teacher focus group interview guide was developed to acquire preservice teachers' perspectives on the roles the focal students assumed during the service-learning project and how the focal students interacted with peers and adults. The interview guide was designed using the strategies described by Stewart, Shamdasani, and Rook (2007) and Krueger and Casey (2000) (see Appendix H). Focus groups are different from individual interviews in the sense that the moderator and the composition of the group are considered part of the instrument in addition to the questions asked (Stewart, Shamdasani, & Rook, 2007).

The peer and teacher interview guides were piloted prior to implementation during the study with two doctoral students who assisted with the project implementation and with experts in service-learning and social interaction for students with severe disabilities. The preservice teacher focus group interview guide was piloted with two preservice teachers who implemented the service-learning project last year. Modifications were made to the interview guides, based on the pilot participant feedback, to improve the clarity of questions, and to minimize the imposition of predetermined or dichotomous response questions. The goal of using an open-ended interview format was for participants to use their own words to describe their perceptions, thoughts, feelings, and experiences. Dichotomous response questions presuppose and limit possible answers from participants and were avoided (Patton, 1980).

Data Collection

Data were collected using a document review, survey, observations, interviews, and focus groups. The cases centered on four focal students with severe disabilities during implementation of the Ben's Bells inclusive service-learning project. Data collection focused on observing the focal students participating in the project while working in groups and the perceptions of the adults and peers involved.

Procedures for participant recruitment and consent. To recruit the participants, I first approached the art teachers, whom I already had relationships with from previous implementations of the service-learning project, to invite them to participate in the project (see Appendix I for the script for the art teachers and art teacher consent form). I then approached the special education teachers who previously coordinated the participation of students with severe disabilities in the project to ask them to send home a letter to the parents of students with severe disabilities describing the service-learning project and to request consent for their child to participate (see Appendix I for the parent consent form – child with a disability).

The special education teachers asked the students with severe disabilities who were not already enrolled in one of the art classes if they would like to join an art class for the service-learning project, which occurred one class period per week, for six weeks. In lieu of written assent, I asked the focal students with severe disabilities prior to each data collection opportunity if they would like to participate. The focal students were provided the opportunity to respond by whatever means of communication the student used. School staff assisted in interpreting nonverbal means of communication. If the focal student with a severe disability indicated in any way (e.g. crying, leaving the room, or gesturing to leave) that they did not want to participate, then his or her choice was honored, and the student was not asked again until the next data collection opportunity the following week (see Appendix I for the script for the students with severe disabilities). The script was used with the focal students with severe disabilities prior to every data collection session.

Two high school peers from each art class within the four classes were recruited to participate in the research. These two peers were grouped with the focal student with severe disabilities in each class. In order to identify peers, the art teachers administered the Student Free

Time Interests and Activities Survey (see Appendix B) to the students approximately two weeks prior to the start of the study. Following administration of the survey, I compiled the activities and interests reported by class and shared the results with the special education teachers to narrow the interests and activities to those believed to be preferred interests and activities of each focal student with severe disabilities. Using this narrowed list and each student's preferred communication method the special education teacher asked each focal student with severe disabilities if he or she liked the activity or interest areas. If the student was unable to express his or her preferred interest areas, then the special education teacher selected what he or she believed were the student's top three interest areas. Based on these results, I reviewed the responses to the Student Free Time Interests and Activities Survey to identify peers who had common interests with the focal student with severe disabilities for each class. I asked the art teachers if the two identified peers had issues with absenteeism. This was not identified as an issue for any of the selected peers. I then spoke with the two peers individually (see Appendix I for the script for the peers) and provided them with (a) an informed consent letter to give to their parents and (b) a written assent form for them to sign. The peers were informed that they could choose to participate or not participate without any impact on their class grades. The peers were asked to return both forms to the art teacher (see Appendix I for the parent consent form – general education student and the high school student assent form).

If consent and/or assent were not obtained for one or both of the peers, then I reviewed the survey data again to select another student to serve as a peer who also had an interest in common with the focal student with severe disabilities. When possible, I selected peers in which all three students in the focal group had at least one interest in common. For two focal groups, this was not possible, and instead, I selected peers who had at least one interest in common with

the focal student with severe disabilities, but the peers did not share a common interest.

The other students in the class were also assigned to small groups for the service-learning project, but they were considered non-focal peers. Approximately two weeks before the start of the study, the art teachers sent two letters home with these students providing parents and students with an opportunity to opt-out of the observations for the research (see Appendix I for the parent information letter and the student information letter for the non-focal high school students).

Paraprofessionals (i.e., classroom assistants) or special education teachers accompanied some of the students with severe disabilities to the art classes during the service-learning project, or they were already serving students in the art classes. Although the focus of the project was not on the paraprofessionals or special education teachers, these individuals may have interacted with the selected focal groups during the project, and therefore may have been video recorded or included in the live observations. I explained the research project to the paraprofessionals and special education teachers and obtained their written consent prior to the start of the observations (see Appendix I for the script for the paraprofessionals / special education teachers and the paraprofessional / special education teacher consent form).

Preservice teachers who were University of Illinois at Urbana-Champaign juniors and master's students in the initial special education teacher certification program in the Department of Special Education were recruited from the students enrolled in SPED 199/590SL: *High School Service-Learning*. These students facilitated the implementation of the service-learning project with the art classes at the three high schools. I described the research project in person during the second class of SPED 199/590SL, and I provided the preservice teachers with informed consent forms (see Appendix I for the script for recruiting the preservice teachers and the preservice

teacher consent form). I asked one of the students in the class to collect the consent forms, place them in an envelope, and return the forms to my mailbox in the Department of Special Education.

Procedures for document review. Following consent from each focal student's parent or guardian, I conducted a review of IEP documents, which included the disability categories, eligibility for the IAA, social and/or communication objectives, results from prior assessments, present level of functioning, and support needs for each focal student with severe disabilities. This information was recorded on a paper copy of the Document Review Form. The information regarding disability category and social and/or communication objectives was copied exactly as written in the IEP, and I recorded whether the focal student was eligible for the IAA. I summarized information in the IEP regarding any assessments of IQ, adaptive behavior, and communication functioning. A summary of the focal student's present level of functioning and support needs in the areas of communication and social skills was recorded on the form.

Procedures for observations. Six observations were conducted of each focal group, with one observation occurring each week during the service-learning project, with the exception of the focal group at Main North High School. Five observations were conducted for this group instead of six because live observation data could not be recorded during the sixth session due to inclement weather. The first five observations for each focal group were video recorded and included live observation data. The sixth observation only included live observation data, as the groups traveled from the classroom into the community to distribute the Ben's Bells. The duration of the observations was the entire session for each class period of the service-learning project (approximately 50 minutes). Fidelity of implementation data were collected during each observation session, noting whether the preservice teachers completed each major component of

the lesson plan each session. The purpose of the fidelity of implementation data collection was to assess whether the preservice teachers were uniformly addressing each component of the lessons across the art classes. There were 27 total components over the six lesson plans. The fidelity of implementation data (number of lesson plan components completed) were recorded within the memos for each observation.

An iPhone5™ mounted on a small flexible tripod was used for video recorded observations. The iPhone5™ was positioned approximately three feet away from the focal group's table, on top of a moveable supply cart with wheels. The camera was positioned to ensure that the focal student and peers could be clearly viewed, and that any object, such as backpacks or classroom furniture did not obstruct the view. During the observation, I ensured that the video camera was recording during the entire 50-minute session and asked anyone who stood directly in front of the camera to move. The cart position was adjusted during the session as needed, to ensure that the interactions occurring at the table were captured on video. When I needed to leave the area to record live observation data, I checked that the camera was recording before moving away, and I ensured the camera was still recording when the focal student with severe disabilities returned to the table with his or her peers.

Live observation data was collected only during times when the focal student was not being video recorded. My role during observation data collection was that of a non-participant observer. During the observations, I stood within a few feet of the focal student with severe disabilities, either to the side or behind him or her, in a position that did not impede the student or others from engaging in activities. Whenever the focal student moved out of the camera frame by leaving his or her group's table, I began observing the focal student, starting when the next interval was cued on the audio recording of the intervals being played through ear buds. I

observed the focal student during the entire 10-second interval. During the next 10-second interval, I recorded the categories on the Live Observation Form using an iPad2™. I continued the live observing and recording using the same procedure until the focal student returned to his or her assigned table and was back in the video recording frame. During the sixth observation session, I collected live observation data during the entire session following the same 10-second observe, 10-second record procedures. The codes recorded on the Live Observation Form included: (a) initiation; (b) response; (c) interaction type (social or task related); (d) adult physical proximity (within 3 feet of the focal student versus more than 3 feet from the focal student); and (e) adult prompting (verbally directing a peer or the focal student to interact or no verbal prompt to interact).

A second observer conducted an IOA for one observation session per focal student (17% of the live observation sessions). Before data collection began, the session to conduct the IOA was randomly selected for each focal student from one of the first five observations. IOA was not conducted during the sixth observation session due to the nature of the distribution activity that involved traveling into the community. It would have been difficult to remain unobtrusive with two observers recording data during this activity. IOA reliability data were collected during the first observation at Hill Valley High School, during the fifth observation session at Main North High School, and during the third observation session for both focal students at San Dimas High School. The procedures for conducting the IOA were the same as during the pilot training sessions, with the second observer simultaneously and independently recording data on the Live Observation Form on a separate iPad2™. At the beginning of the session, the primary and secondary observers synced the audio recording played through the Seconds Pro™ application on the iPad2™ that signaled the intervals.

The results for the IOA for each behavior category of the live observation sessions exceeded the 80% criterion level for each focal student. The following were the mean IOA for each behavior category across focal students, with ranges for the minimum and maximum IOA: initiations: focal student (99.73%, 98.91%-100%), peer 1 (100%), peer 2 (100%), non-focal peers (100%), preservice teachers (99.93%, 99.73%-100%), art teachers (100%), paraprofessionals (99.93%, 99.73%-100%), other adults (100%); responses: focal student (99.59%, 98.37%-100%), peer 1 (100%), peer 2 (100%), non-focal peers (99.52%, 98.09%-100%), preservice teachers (99.86%, 99.46%-100%), art teachers (100%), paraprofessionals (99.73%, 98.91%-100%), other adults (100%); type of interaction: social interaction (99.66%, 98.64%-100%), task related interaction (99.52%, 98.09%-100%), unknown interaction (100%); adult physical proximity (99.66%, 98.64%-100%); and adult prompting (100%).

The school staff was informed prior to the observations that I would be taking notes, and that I would not be able to interact until the activities ended for the session. If a student or staff member tried to engage me during an observation session, I responded, "Sorry, I'm taking notes right now. Let's talk at the end of class." Following the live observation session, a research memo was written to reflect on any issues of bias or initial interpretations from the session.

Three of the video recordings from the observation sessions did not have audio as part of the recording and were not able to be analyzed, which included the first observation session for the focal student at Main North High School and one of the focal students at San Dimas High School and the second observation session at Hill Valley High School.

Following the observation sessions, data were collected from the video recordings by coding within the VCode™ software using a 10-second interval procedure and the codes from the Video Observation Form. Each 10-second interval of the video was viewed and coded if the

focal student was present in the video at any point during the interval. The following categories on the Video Observation Form were coded: (a) initiation; (b) response; (c) interaction type (social or task related); (d) adult physical proximity (within 3 feet of the focal student versus more than 3 feet from the focal student); (e) adult prompting (verbally directing a peer or the focal student to interact or no verbal prompt to interact); (f) task type (task is being completed collaboratively, independently, or no task is being performed); and (g) common interest (the interaction involves the focal group's common interest or does not involve the common interest). Each interval was viewed as many times as needed to complete the coding. Following the end of video recording for the observations, one video recorded observation for each focal student (20% of video recorded observations) was randomly selected to conduct the IOA. IOA reliability data were collected from the first video observation at Hill Valley High School, the second video observation session at Main North High School, the fourth video observation session for the first art class at San Dimas High School, and the second video observation session for the second art class at San Dimas High School. The second observer who conducted IOA coding independently viewed the selected video recordings and each 10-second interval, as many times as needed to code the behavior categories for each interval in which the focal student was present. The researcher coded all of the video sessions for each school in the order of the observation sessions, starting with the first video session at Hill Valley High School to ensure observer drift was not an issue for IOA.

The results for the IOA for each behavior category of the video observation sessions exceeded the 80% criterion level for each focal student. The following were the mean IOA for each behavior category across focal students, with ranges for the minimum and maximum IOA: initiations: focal student (97.77%, 94.77%-100%), peer 1 (99.45%, 98.17%-100%), peer 2

(98.73%, 96.95%-99.64%), non-focal peers (99.83%, 99.64-100%), preservice teachers (97.03%, 95.53%-99.09%), art teachers (99.83%, 99.64%-100%), paraprofessionals (99.42%, 98.03%-100%), other adults (98.44%, 96.56-100%); responses: focal student (89.61%, 82.95%-93.81%), peer 1 (91.59%, 84.84%-95.88%), peer 2 (90.44%, 85.56%-93.47%), non-focal peers (98.49%, 94.59%-100%), preservice teachers (93.73%, 89.84%-99.09%), art teachers (99.48%, 98.56%-100%), paraprofessionals (98.60%, 94.75%-100%), other adults (97.36%, 94.50-99.28%); type of interaction: social interaction (93.52%, 88.81%-97.87%), task related interaction (89.83%, 87.73%-91.77%), unknown interaction (98.54%, 97.11%-99.39%); adult physical proximity (95.52%, 92.42%-97.94%); adult prompting (93.82%, 90.72%-96.34%); collaborative task: focal student (93.14%, 87.73%-95.74%), peer 1 (92.09%, 89.84%-93.13%), peer 2 (92.34%, 85.90%-95.12%); independent task: focal student (89.60%, 85.56%-93.13%), peer 1 (90.97%, 86.64%-93.90%), peer 2 (91.59%, 88.52%-94.82%); no task: focal student (90.98%, 87.21%-98.28), peer 1 (95.42%, 88.09%-99.66%), peer 2 (95.93%, 91.15%-99.66%); and common interest discussed (99.28%, 97.11%-100%).

Procedures for interviews. One individual interview was conducted with each peer in the focal groups and with each of the participating art teachers after the service-learning project was finished. The goal of the interviews was to encourage the peers and teachers to describe their perceptions of the peer and adult interactions that occurred during the service-learning project and to describe the perceived roles that the focal students played. Patton (1980) asserts that building rapport with the individual being interviewed is critical to obtaining meaningful data, and this is accomplished by conveying the importance of the interviewee's knowledge, experiences, and feelings. The teachers had all participated in the project for two years, and I had developed a good rapport with them during this time. The peers became familiar with me

through my presence during the service-learning project.

Prior to beginning the study, the peers and art teachers provided assent and consent to participate in the interviews that were audio recorded. Before beginning an interview, the participants were asked again for their permission to audio record the interview for the purpose of transcription. The peer interviews occurred during the art class with permission from the art teacher to have the student leave class for the interview, which took approximately 15-minutes. The teacher interviews occurred either after school or during their preparation period, which lasted approximately 30-minutes. The interviews occurred at the school in a quiet location where there was privacy, including empty classrooms and in an office. The interviews were conducted using the pre-determined questions on the interview protocols. Probes were used, as needed, to help participants expand on their responses. Immediately following each interview, any handwritten notes taken during the interview were typed using a word processor, and then expanded to create a memo. Any initial codes and interpretations were noted in each memo.

Procedures for the preservice teacher focus group interview. The preservice teacher interviews consisted of four separate focus groups. Each focus group consisted of two to three preservice teachers who were assigned to a high school classroom in which the service-learning project was implemented. During the service-learning activities, the preservice teachers facilitated the project and provided support to students with and without disabilities. The preservice teachers worked together as a team and had varying amounts of contact during the project with the focal group in each class. Each group of preservice teachers assigned to a class with a focal group was asked to participate in a single focus group interview. The goal of the focus group interviews was to have the preservice teachers describe their perceptions of the peer and adult interactions that occurred during the service-learning project and to describe the

perceived roles that the focal students played.

To conduct the preservice teacher focus group interviews, a quiet space that was free from visual and auditory distractions in the College of Education at the University of Illinois was reserved. Each focus group was conducted at a time that was mutually agreeable to all members of a group. Refreshments were provided for the preservice teachers as suggested by Stewart et al. (2007) as a means to promote rapport and as an incentive to participate. The Preservice Teacher Focus Group Interview Guide (see Appendix H) provided the order of the procedures and the specific questions asked. I served as the moderator during the interview by explaining the purpose of the focus group, the ground rules for participation, asking the interview questions, and guiding the conversation to ensure it remained focused on data relevant to the research questions. A doctoral student in the Department of Special Education served as the assistant moderator. The assistant moderator recorded notes on non-verbal interactions and responses of the participants, but did not interact with the participants during the focus group. Audio recording of the focus group interview was described on the preservice teacher consent form, and I asked again, just prior to the focus group interview, for permission from each member to audio record the session. As part of the discussion of the ground rules, I asked the preservice teachers to keep the discussion during the focus group confidential, so that each member would feel comfortable sharing their experiences and perspectives (see Appendix H for a complete list of the ground rules) (Krueger & Casey, 2000). Immediately following the focus group, I conducted a debriefing session with the assistant moderator to discuss any initial interpretations from the participant responses, and to compare and contrast the focus group to the other preservice teacher focus groups conducted (Krueger & Casey, 2000). Any notes written by the moderator during the focus group and the debriefing were expanded into a memo. Links to the digital audio file

recording were provided to a transcriptionist who created a verbatim transcription of the focus group interviews.

Memos. Following each data collection opportunity from the observations, student and teacher interviews, and the preservice focus groups, I wrote a memo documenting impressions about peer interactions and roles assumed by focal students during service-learning. The memos also provided an opportunity to reflect on potential sources of bias and any initial interpretations of the data collected. The goal of this reflexive approach was to bring awareness to any issues of bias and to act to minimize the effects of the bias on data collection and analysis.

Confidentiality and data security. All electronic data, including observation videos, video and live observation forms, individual interview and focus group interview recordings and transcriptions, memos, and document review notes were stored on a secure computer server that was password protected. Any hard copy notes, documents, consent forms, and any other printed materials related to the study were stored in a locked filing cabinet in the Department of Special Education at the University of Illinois at Urbana-Champaign. The focal students, peers, teachers, and preservice teachers were assigned identification numbers that were used to record all data collected. For the peers, once consent was obtained, their identification numbers were written on his or her survey, and the other identifying information was removed. A separate document contained the participants' names and corresponding identification numbers to help protect confidentiality. The names of the participating focal students, peers, teachers, paraprofessionals, preservice teachers, and the schools were given pseudonyms for publications and presentations to protect the identities of those involved. No identifying information was collected from the non-focal peers in the art classes. The key for identification numbers and the informed consent forms were stored securely in separate filing cabinets in the Department of Special Education at

the University of Illinois at Urbana-Champaign. Digital audio recordings were destroyed following review of the transcription for accuracy.

Data collection timeline. Data collection occurred across 12 weeks from August 2013 to December 2013. Details regarding the data collection timeline are provided in Table 7.

Data Analysis

A concurrent mixed methods case study approach was used to organize, analyze, and interpret the data. Analysis included descriptive statistics and multiple multivariate regression analysis statistical tests of the quantitative data collected. An inductive analysis strategy was employed across the qualitative data sources in which codes, categories, and themes emerged from the data rather than being predetermined (Patton, 1980). Following initial analysis of quantitative and qualitative data, the analysis was mixed through comparisons seeking convergence and divergence for an overall interpretation (Creswell & Plano Clark, 2007).

Each research question required a different strategy for data analysis to ensure a match between the aim of each research question and the method for analyzing and interpreting the findings. A description of the reasons for mixing methods for each research question, the key data that was employed in the analysis, the method of analysis, and how the methods were integrated are provided in Table 8.

Analysis of observations. Quantitative and qualitative data from the observations will be separately analyzed initially using deductive and inductive analysis procedures, respectively for each type of data.

Quantitative data. The quantitative data that were analyzed for each 10-second interval of the video recorded observations include: (a) initiation; (b) response; (c) interaction type (social or task related); (d) adult physical proximity (within 3 feet of the focal student versus

more than 3 feet from the focal student); (e) adult prompting (verbally directing a peer or the focal student to interact or no verbal prompt to interact); (f) task type (task is being completed collaboratively, independently, or no task is being performed); (g) common interest (the interaction involves the focal group's common interest or does not involve the common interest); and (h) reciprocity. The common interest was noted for each focal group at the top of the video recorded observation form. This information was collected through the student interest survey and from the focal students with severe disabilities and their special education teacher; therefore, a separate analysis of the student interest survey was not needed. The analyzed data files from the video observations were imported from the VCode™ software into Stata™ for statistical analysis. Reciprocity was not coded in the videos, but was instead calculated by creating a new variable in Stata™. The new indicator variable for reciprocity was calculated for each interval by determining whether the focal student completed a conversational turn with a communication partner through an initiation and response that occurred during the same interval or a consecutive interval. The quantitative data from the live observations included the same categories, except for reciprocity, task type, and common interest. The data from the live observations was imported into Excel™ to calculate descriptive statistics.

Following coding and IOA procedures for all the quantitative data for each focal group, descriptive statistics for each category related to peer interactions (initiation, response, interaction type, and common interest) were calculated for measures of central tendency, such as the mean percentage of intervals in which each behavior category was recorded per observation session and across sessions for each focal student. This process was repeated across observations for each focal student. The data from the video and the sixth live observation sessions are presented separately. The data from the live observation sessions, from sessions one through five

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for each focal group, are not presented because they occurred with extremely low frequency, with a mean of 5.4 (10-second) intervals coded per session across focal students.

Measures of association were calculated for each focal student by aggregating data across all video recorded observations as part of the analysis for the second research question regarding the relationship between specific contextual factors and peer interactions that occurred during inclusive service-learning. A multiple multivariate regression analysis was calculated to determine if there was relationship between any of the variables of peer interaction that involved a focal student (initiation, response, reciprocity, interaction type, and common interest) and the contextual variables (task type, adult physical proximity, and adult prompting). The multiple multivariate regression analysis was calculated to compare the peer interaction variables across the contextual variables within a model and by two categories of variables at a time (e.g. initiations and adult prompting).

Qualitative data. The video observation recordings were also analyzed qualitatively to determine what roles the focal students assumed and to determine the nature of peer and adult interactions that occurred involving the focal students during the service-learning project. Each observation was reviewed and coded to record behaviors that indicated the focal student was assuming a role that fit into one of the major role categories proposed by Benne and Sheats (1948). They proposed that members of a group assume functional informal roles based on three possible functions: task completion roles, group building roles, or individualistic roles. Anticipated observable behaviors that align with these three types of functional informal roles were coded for each observation session by viewing the video segments that included the focal student and writing descriptive notes regarding these behaviors. The videos were coded within NVivo™ software to maintain an audit trail of the coding. An initial list of the anticipated

observable behaviors to code within each of the major role categories are provided in Table 9. Other behaviors associated with roles that are not originally included in the list were added to the coding as they emerged.

To begin analysis of the qualitative video recorded observational data, each observational session was analyzed separately. The first round of analysis involved developing codes for the focal student behaviors related to major role types, using the method of constant comparative analysis (Lincoln & Guba, 1985). The coding was then compared and contrasted across observation sessions for each focal student and then across all focal students. Following this round of data analysis, codes that were developed were merged to develop categories of data that fit together. I anticipated that the categories would be the same as those developed by Benne and Sheats (1948), but I remained open to new role categories emerging. These categories were compared and contrasted with the categories that emerged from the interview data regarding roles of the focal students.

Analysis of interviews and focus groups. Prior to beginning the analysis of the interviews and focus groups, the digital recordings from the interviews were transcribed verbatim, the transcriptions were reviewed for accuracy, and then the digital audio recordings were destroyed. The transcriptions were imported into NVivo™ software for coding. To help ensure the accuracy of the data collected and initial interpretations made from the interviews and focus groups, I performed member checks using summaries of the interviews for feedback (Stake, 1995). A summary of each respective interview was provided to the peers and teachers with a request to confirm the accuracy of the summary contents and to provide feedback regarding any needed changes. Member checks were performed for the focus group interviews by sending each participating preservice teacher a summary of the focus group responses with a

request to respond with feedback or corrections. All interview and focus group participants responded and stated that the summaries accurately reflected the views they expressed during the interviews.

Coding each individual interview consisted of attaching units of meaning to small segments of the data using indigenous typologies. These were labels or terms expressed by the peers, art teachers, and preservice teachers (Patton, 1980). Then, codes were created for the data not expressed in the participants own specific labels or terms. The focus group interviews were initially analyzed by comparing and contrasting responses of the preservice teachers for each question and by creating codes for each of the responses.

After each interview was coded separately, coding for questions repeated across the two peers in the same focal group were compared and contrasted. The next round of analysis for the interview data involved comparing and contrasting responses to matching interview questions across the three groups of participants interviewed within each class (i.e. peers, art teacher, and preservice teachers). Following coding across participants within each class, another round of analysis examined responses of all of the participants interviewed across classes. Examination of initial codes led to codes that could be clustered together to construct categories and subcategories as a means to organize and subsequently interpret the data (Patton, 1980).

Steps were taken to ensure the credibility and trustworthiness of the coding process. A second reader (my doctoral advisor) reviewed a random selection of 20% of the coding and reviewed the categories to confirm consistency in the coding. Analyses of the observation data occurred throughout data collection and following data collection for the interviews. Coding was modified during each round of analysis to ensure that codes fit with existing labels using a process of constant comparison.

Analysis of memos. The ongoing case notes were analyzed for the purpose of revealing any potential issues with researcher bias and to compare any initial interpretations to those that evolved throughout data analysis. No issues arose regarding potential researcher bias that required any modifications that were needed for analyses.

Analysis across data sources. For each research question, analysis across data sources was conducted. Each research question required different sources of data to be included in this final stage of analysis. Additionally, the point at which analysis integration between quantitative and qualitative methods occurred or did not occur differed for each research question. A summary of the approach to the integration of the quantitative and qualitative data is included in Table 8.

Research question one. For the first research question regarding how high school students with severe disabilities interact with peers and adults during inclusive service-learning, a search for convergence and divergence across the quantitative data sources (i.e. video recorded observations and live observations) and qualitative data sources (i.e. interviews, focus groups, and video recorded observations) was made from the findings of both sets of data. The findings from the video recorded and live observation data regarding the frequency of peer interaction variables involving the focal students (i.e. initiation, response, reciprocity, interaction type, and common interest) were compared and contrasted to the findings regarding peer, art teacher, and preservice teacher perspectives of peer interactions for the focal students. At this point, themes emerged through convergence of the data from the categories related to peer interactions. Interpretations from the quantitative and qualitative data analysis that provide a complementary understanding of the different facets of peer and adult interactions are also represented in the findings.

Research question two. This research question examined how contextual factors of: (a) the composition of focal groups (students grouped together by sharing or not sharing common interests and/or a willingness to help classmates); (b) type of task (task is being completed collaboratively, independently, or no task is being performed); (c) adult physical proximity (within 3 feet of the focal student versus more than 3 feet from the focal student), and (d) adult prompting (verbally directing a peer or the focal student to interact or no verbal prompt to interact) relate to the peer interactions of students with severe disabilities during inclusive service-learning. To integrate the interpretations from the quantitative and qualitative data, the findings from the multiple multivariate regression analysis were compared and contrasted to the findings from the qualitative data (i.e. interviews, focus groups, and video observations) that emerged for the purpose of seeking convergence across the findings and to provide an enriched understanding of each factor.

Research question three. The data collected and analyzed to address the final research question regarding the roles high school students with severe disabilities assumed during inclusive service-learning were derived from qualitative sources, including observations, interviews, and focus groups. No mixing of methods was conducted to address this research question. Codes developed across all data sources (i.e. observations, peer and teacher interviews, and preservice teacher focus group interviews) for the roles assumed by each focal student with severe disabilities were merged into categories. The coding was examined for the extent to which the data belonged to a specific category and the extent to which categories were distinct (Patton, 1980). Guba (1978) suggests checking for evidence of flawed categorization by determining if there are data from codes that cannot be assigned to a category, or if there are many overlapping categories. A search for convergence and divergence across the data sources lead to triangulation

of the data and the emergence of themes to address this research question. Triangulation is the process by which the researcher works to "substantiate an interpretation or clarify its different meanings" (Stake, 1995, p. 173). In this case, data triangulation was used to see if the themes emerging across observations, interviews, and focus group interviews carried the same meaning.

Case descriptions. Following data analysis, detailed case descriptions were written for two focal students and case description summaries were written for the other two focal students from the classes participating in the service-learning project. The detailed case descriptions integrate all of the categories from analyses across all data sources and provided a synthesis of the research findings for each focal student. The purpose of the case descriptions is to present the descriptive statistics and the themes that emerged regarding the interactions of focal students with peers and adults during inclusive service-learning; the relationship between contextual factors related to the composition of focal groups, type of task, adult physical proximity, and adult prompting and peer interactions; and the roles focal students assumed during the project. Quotations from peers, art teachers, and preservice teachers, along with vignettes that were representative of the themes were included in the case descriptions. The case descriptions also highlight interpretations from the descriptive and regression analysis, and they provided the framework for interpretations included in the discussion chapter. The interpretations presented reflect an interpretative approach for the analysis across the four focal students, meaning that the interpretations across focal students were based on an analysis that compared and contrasted the interpreted findings for each focal student rather than through an analytic process of comparing individual variables.

Inference Quality

Tashakkori and Teddlie (2003) suggest using the term inference quality in mixed methods studies to refer to what is commonly called validity in quantitative research and credibility in qualitative studies because inferences are made from the findings of data regardless of methodology employed. They recommend that researchers provide evidence of inference quality through the quality of the study's design and the rigor of inferences made through analysis. Although mixed methods research involves selecting quantitative and qualitative measures that will combine complementary strengths to address the research questions, this does not limit the need to implement strategies that will ensure the quality of the rigor in the research (Onwuegbuzie & Burke Johnson, 2006). Moreover, researchers need to address issues related to the integration between quantitative and qualitative data, such as the methods for comparing quantitative and qualitative data. To provide evidence of inference quality within this study, I will describe the strategies employed for collecting the quantitative data and qualitative data, and the integration process.

Quantitative methods. Krathwohl (2009) notes that internal and external validity are not an issue when discussing descriptive studies that are not designed to provide evidence of causality. Construct validity is an issue to consider for descriptive studies, including this investigation, when planning the design of the measures to capture the intended constructs of the study. To ensure validity within this investigation, I have based the development of my quantitative measures on previous research to create the operational definitions for the individual indicators for one of the two main constructs of this study, peer interactions. Carter et al. (2005) noted that some elements of the peer interactions construct have been missing from previous investigations, and these studies have too often narrowly focused on initiations and responses without regard for the reciprocity of interactions, the topic of conversation, or other contextual

factors that may influence these behaviors. Including multiple behaviors to examine peer interactions provides for greater construct validity of the observational measures. Other strategies during data collection were employed to promote the validity of the study, including remaining unobtrusive as possible while collecting observation data by maintaining my position as a non-participant observer and by utilizing equipment that limited obtrusiveness through the participants familiarity with the iPhone5™ that was used as the video camera.

Qualitative methods. Brantlinger et al. (2005) present several important strategies for establishing the credibility of the findings of a qualitative research study. Notably, the strategies they suggest are not a checklist in which all must be included to ensure credibility, but instead the strategies selected should fit with the type of data collected and the questions asked. To begin, the schools and the participants were purposefully selected to provide an appropriate context for examining the research questions and to provide the most likely opportunities for learning about the particularity of these cases.

For data collection and analysis, the strategies that were incorporated into the design of this study promote inference quality, including triangulation of the data sources (Bogdan & Biklen, 2007; Brantlinger et al., 2005; Patton, 1980, Stake, 1995). Four main types of qualitative data (observations, peer interviews, teacher interviews, and preservice teacher focus groups) were collected to maximize the potential for answering the research questions. A second reader, an expert in the area of inclusive service-learning, reviewed a portion of the coding of the qualitative data collected and provided feedback and additional perspectives on the analysis performed and interpretations made from the findings. Specifically, both the researcher and second reader searched for disconfirming evidence and posed alternative explanations (Brantlinger et al., 2005; Patton, 1980). An audit trail was maintained through a record of data

entries, coding modifications, and by linking codes and memos to original data sources (Brantlinger et al., 2005; Patton, 1980).

For the peer and art teacher interviews, and the preservice teacher focus group interviews, the questions were based on the literature in the area of peer interactions of students with severe disabilities and small group roles, and from feedback from experts in the field. Member checks were conducted with all of the participants who were interviewed to help confirm the meaning of responses and to assess the accuracy of interpretations. Procedures for interviews and observations received approval by the University of Illinois at Urbana-Champaign Institutional Review Board, and processes were in place to ensure confidentiality of the participants.

The cases have been presented to provide the reader with a vicarious experience of the individuals involved through thick descriptions of contexts and use of direct quotations. This provides evidence for the subsequent interpretations and enables the reader a greater understanding of the cases to formulate their own conclusions or naturalistic generalizations (Brantlinger et al., 2005; Stake, 1995, Stake, 2005). The case descriptions portray the overall themes of the study and are presented with direct links to the data.

Finally, to ensure explicit description of the researcher's role and assumptions, these issues were explicated in the Researcher Identity section and continued to be a source of reflection throughout the study and were documented in ongoing case notes and memos (Brantlinger et al., 2005; Bogdan & Biklen, 2007). All of these procedures helped to ensure that the process of qualitative data collection and analysis was transparent, and that I maintained a reflexive role that would result in more credible findings.

Integration process. Onwuegbuzie and Burke Johnson (2006) suggest nine possible types of indicators of inference quality that they call legitimization typologies. Two of these typologies can provide evidence of the integration process quality within this study. These include: (a) sample integration and (b) inside-outside. Sample integration refers to whether the sampling design for both the quantitative and qualitative measures enables inferences across the two types of data sources. The key to this indicator is that the sources of the quantitative and qualitative data are drawn from the same samples. Within this study, data from observations and interviews were collected from the same participants, with the exception of the focal students with severe disabilities, who were not interviewed, and the paraprofessionals or special education teachers who were present during observations, but were not the focus of the study. For the indicator of inside-outside, Onwuegbuzie and Burke Johnson suggest that the researcher needs to effectively integrate the observer's view and the participants' views in the interpretations of the data. Member checks were performed as part of the process to ensure the inside-outside indicator was met. Both of these integration processes supported the quality of the interpretations to answer the research questions.

Chapter 4

Individual Case Descriptions

The purpose of this study was to examine the interactions of students with severe disabilities with peers and adults, and the roles students with severe disabilities assume within the context of inclusive service-learning. This study included three research questions:

- How do high school students with severe disabilities interact with peers and adults during inclusive service-learning?

- How are the following contextual factors: (a) the composition of focal groups (students grouped together by sharing or not sharing common interests and/or a willingness to help classmates); (b) type of task (task is being completed collaboratively, independently, or no task is being performed); (c) adult physical proximity (within 3 feet of the focal student versus more than 3 feet from the focal student), and (d) adult prompting (verbally directing a peer or the focal student to interact or no verbal prompt to interact) related to the peer interactions of students with severe disabilities during inclusive service-learning?

- What roles do high school students with severe disabilities assume during inclusive service-learning?

Fidelity of implementation data were collected during each observation session, noting whether the preservice teachers completed each major component of the lesson plan each session. The purpose of the fidelity of implementation data collection was to assess whether the preservice teachers were uniformly addressing each component of the lessons across the art classes. There were 27 total components over the six lesson plans. The preservice teachers in the four classes implemented the lesson plans with high fidelity, with a mean fidelity of implementation of 98.15% across focal groups.

Two focal students were purposefully selected to present their individual case descriptions to serve as a grounding context to discuss the findings across the four focal students. The two students were selected based on those that were the most different in terms of communication ability to allow for the greatest variation among cases in peer interactions to be described. The focal student with the greatest communication skill was Lamar from San Dimas High School. Lamar was the most verbal student of the four focal students. Peers and adults usually understood Lamar's speech. Bea, also from San Dimas High School, was selected to present her individual case description because she had the most significant challenges in communication. She did not use verbal communication. During the project, she typically communicated through eye gaze, facial expressions, and motor movements to gain attention or indicate a preference. Summary case descriptions for the other two focal students, David at Main North High School and Matt at Hill Valley High School, are presented at the end of the chapter.

The findings for each case are organized by research question. Findings regarding how students with severe disabilities interacted with peers and adults are presented by the categories triangulated from the quantitative and qualitative data. These are followed by the categories that emerged from the analysis of data sources that served the purpose of expansion. For the second research question regarding the relationship of specific contextual factors to peer interactions, the findings are presented through the triangulated categories from the quantitative and qualitative data.

The findings for the third research question are organized by presenting the roles the student with severe disabilities assumed within each category presented by Benne and Sheats (1948), including (a) group building roles, (b) task completion roles, and (c) individualistic roles. An additional category of roles emerged from the analysis across the qualitative data sources

called neutral roles. Neutral roles are defined as a passive role in which the student is neither engaging in behaviors that positively support task completion or group building, nor are they intentionally negative. The reason the student may assume a neutral role may be that he or she does not have the ability to engage in a positive action unless provided with the opportunity, or they may not have the social or communication skills necessary to initiate taking on a role. Following the description of the roles the student with severe disabilities assumed within Benne and Sheats three main categories, a description of the neutral roles the student with severe disabilities assumed are presented. Table 10 provides a list of all of the roles students assumed by category, with definitions each and a checklist of roles assumed by each focal student.

The case description for each student with severe disabilities provides a synthesis of the individual case findings regarding peer and adult interactions, contextual factors related to peer interactions, and the roles these students assumed during the project. These descriptions provide the grounding context to synthesize the findings across all four of the students with severe disabilities.

Lamar at San Dimas High School Case Description

Lamar, a 16-year-old African-American male with a moderate intellectual disability and a physical impairment, was enrolled in the Introduction to Sculpture class at San Dimas High School that was associated with the inclusive service-learning project. Lamar previously participated twice in the project. Two seniors in the class joined Lamar to form the focal group. Together, the three students comprised a *willingness to help with a mixed common interest group*. Peer 1, Sandra, a Caucasian female, responded on the student survey that she strongly agreed with the statement that she was willing to help other classmates. She shared a common interest with Lamar of enjoying socializing with friends. Peer 2, Deon, was an African-American

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male. He responded that he agreed with the survey statement regarding willingness to help other classmates. Deon shared two common interests with Lamar, including enjoying sports and playing music. Both peers participated in the inclusive service-learning project in the previous school year, but were in different art classes.

The adults that were typically present in the classroom during the inclusive service-learning project included the art teacher, three preservice teachers, a graduate student supervisor, and the primary researcher. Although, Lamar typically was accompanied to class by a one-on-one paraprofessional, this school staff member did not stay in the art classroom during the inclusive service-learning project. Lamar, Sandra, and Deon were in attendance for each session of the inclusive service-learning project, although Deon was several minutes late to class during the fifth session. Descriptive statistics were calculated using the data from four video recorded sessions and the sixth live observation sessions. The multivariate regression analysis was conducted from the video observation data only. A total of 1260 intervals were coded across video sessions and 66 intervals across live observation sessions. The number of intervals coded for video sessions ranged from 249 to 396 intervals. A summary of findings for Lamar's case regarding peer interactions and contextual factors are presented in Table 11. A summary of the roles that Lamar assumed is presented in Table 12.

Lamar's interactions with peers and adults. Lamar's interactions with peers and adults during the inclusive service-learning project can be described by the following categories that emerged from the analysis across quantitative and qualitative data sources: (a) frequency and ease of interacting, (b) type of interaction and common interest interactions, (c) group functioning, and (d) supports. The first two categories involved data that were triangulated across quantitative and qualitative sources. The last two categories of group functioning and supports

emerged from the qualitative data sources that expand the understanding regarding how Lamar interacted with his peers and adults. The descriptive statistics for the video observation data and the live observation data for Lamar's focal group are displayed in Table 13 and Table 14, respectively.

Frequency and ease of interacting. The frequency and ease of Lamar's interactions with his peers can be described as: (a) Lamar was talkative and initiating conversations, and (b) Lamar easily connected with one peer, but the whole group did not connect. The adults described Lamar as "very talkative" and as not having trouble starting conversations. The perceptions of the adults match the quantitative analysis of the video in which Lamar initiated interactions and made responses in a relatively high proportion of intervals compared to his peers. Across all the four video recorded observations, the percentage of intervals in which Lamar initiated and responded to peers and adults was greater than the percentage of intervals in which either peer initiated or responded to Lamar. Lamar initiated interactions 4.52% of intervals compared to 0.40% for Sandra, and 0.32% for Deon. Lamar responded to peers or adults during 68.33% of intervals. Sandra responded to Lamar 20.00% of intervals, and Deon responded to Lamar 19.60% of intervals. During the live observation sessions in the classroom, few interactions occurred while the student was off camera, with a mean of 5.2 intervals coded per session. For the final live observation, when the students distributed the Ben's Bells out in the community, a similar pattern to the video observations was found for Lamar's interactions, including a greater percentage of intervals in which he initiated and responded to peers and adults.

The preservice teachers and the art teacher noted that there was a social division in the group, explaining that there was a greater connection between Lamar and Deon, than with Sandra. The art teacher and the preservice teachers also discussed how Sandra occasionally left

the group to socialize with other peers, but that this did not impact the engagement in conversation between Lamar and Deon. One preservice teacher noted, "I feel like the connection was mostly with [Lamar] and [Deon], so [Sandra] leaving didn't really affect the way that they would talk with each other." Deon also commented that Lamar was "very easy to talk to." Deon described his perception of a division in the group by stating that he and Sandra "really didn't talk much" and neither did Lamar and Sandra. The quantitative findings from across the video sessions also indicated ease in Lamar's interactions with his focal group, with 68.69% of intervals involving a reciprocal interaction for Lamar across video sessions.

Although the adults and Deon described how the whole group did not connect socially, the findings from the quantitative data reveal that Sandra did interact with Lamar with a similar percentage of intervals, but it cannot be determined from the analysis if those interactions were more frequently social or task related. Deon had a greater percentage of intervals with responding to Lamar than Sandra in three out of the four video observations, although Sandra actually had a greater percentage of intervals responding to Lamar across sessions. The perception by the adults and the peers that a social division occurred within the group does not appear to match the findings regarding the overall frequency of interactions within the group, but the frequency data does not provide information regarding the interactions between peers.

The peers and adults did not discuss how frequently the adults interacted with Lamar, but one preservice teacher did comment that he felt like the preservice teachers developed a "rapport" with Lamar and Deon. The video observation data and the sixth live observation session reveal that the mean percentage of intervals involving adults initiating and responding to Lamar was lower than the percentage of intervals involving Lamar initiating and responding to adults and peers.

Type of interaction and common interests. Lamar's focal group engaged in both social and task related interactions across each session, with the adults commenting that Lamar and Deon mostly had social interactions. The percentage of intervals involving social interactions was greater than task related interactions for each video recorded observation, except for the fifth session, in which the students were assembling the Ben's Bells. During this fifth session, the percentage of intervals involving task related interactions was greater, with 66.96% of intervals involving a task related interaction and 11.99% of intervals involving a social interaction. In the other three videos, the percentage of intervals involving task related interactions ranged from 25.64% to 32.83% and the proportion of intervals involving social interactions ranged from 39.39% to 43.78%.

The quantitative and qualitative data reveal that Lamar's focal group engaged in social interactions involving the common interests used to form their group. Lamar's group engaged in interactions that involved at least one of their common interests for 8.25% of the intervals. The adults and peers provided more information about which specific common interests were discussed within the group, which included Lamar and Deon's common interests of sports and music. The adults all stated that Lamar and Deon mostly talked about sports and current events occurring at school. Deon described how their social interactions usually involved their common interests, "Me and [Lamar], we both like sports … so that's where we found the common ground. He also likes music; I like music." Sandra said that she did not want to participate in these conversations because she was "not particularly into sports." Sandra commented that Lamar and Deon enjoyed talking about sports and that she thought, "It was nice that they were talking to each other." There were no instances observed on the video sessions in which Lamar and Sandra discussed their common interest of socializing with friends.

The adults and peers provided more information about the other topics discussed during social conversations. One preservice teacher noted that Lamar frequently talked about leaving class for his job. Sandra also noted that Lamar talked to her about his job, needing to leave class for his job, playing drums, his church, but that most of their conversations were about the inclusive service-learning project.

The qualitative analysis of the video observations reveals a wide range of other social topics that were also discussed among Lamar, peers, and adults. The whole focal group engaged in social related conversations about homecoming and, during one session, a scheduled fire drill. Lamar and his peers also engaged in greetings with each other. Deon and Lamar were observed to discuss a wide variety of topics in addition to sports, including talking about mutual friends that had already graduated, going to college, movies, the weather, family members, and Lamar's job. Sandra also engaged in one-on-one social interactions with Lamar, including talking about her involvement in the Speech club, Lamar telling her about his job, and Lamar asking her what time it was because he was concerned about leaving for his job. Sandra engaged in a few instances of playful banter with Lamar. During one social interaction, Sandra told Lamar, "Before it came time to apply for college, I had a lot of time to do my job of watching *Star Trek* episodes." Lamar responded, "You not right, [Sandra]. You not right." Both Sandra and Lamar laughed following the interaction. Lamar also engaged in social interactions with adults, in which he talked about sports and homecoming activities.

For task related interactions, the peers commented that all of the focal group members provided each other with task related advice while working together, such as how to decorate a bead or what to do next for a task. Both peers discussed talking to Lamar about making sure the ceramic pieces were painted thoroughly. From the qualitative video analysis, data indicated that

Lamar engaged with his peers and adults in task related interactions, including receiving and giving directions, making decisions as a group, discussing how to perform a task, praising peers and receiving praise, asking for and receiving assistance, and contributing to discussions related to the service mission of the project related to kindness.

     Group functioning. There was some variation among the adults and peers regarding how Lamar's group functioned. The art teacher had a very positive perception of the group.

> I think they really worked together well as a group. [Sandra and Deon], they both are really unique individuals. They're not the type to succumb to peer pressure or trends, so pairing them up with [Lamar] was just perfect because [Lamar] is lively and outgoing, and he doesn't fit the mold either (Art teacher, interview).

Both peers thought that they did a fairly good job working together. Deon noted that they "worked fine" together, but sometimes they were "lazy." Sandra commented that "it seemed like there is a lot of teamwork going on" and that work was completed "in the time limits." Deon also commented about how the group functioned collaboratively. "There were never any arguments or there was never any let-me-do-this-and-you-do-that. I feel like we had all seen eye-to-eye in doing what we had to do" (Deon, interview). The preservice teachers described Lamar and Deon working together well. Deon also discussed how the students in the group treated each other. Deon stated, "We never disrespected each other, or said something that would have been wrong, that would have hurt each other's feelings." The analysis of the video sessions also revealed how Lamar and his peers worked together as a group, including the students collaborating to divide up a larger task, such as creating the centerpieces, Lamar helping Sandra find a missing piece of cord, and all of the students sharing materials.

Supports. Adults provided most of the supports to Lamar, with peers occasionally providing supports, which involved physically assisting him with tasks or showing him how to perform a task. The preservice teachers noted Lamar's need for supports were due to his physical disabilities. Examples of supports Lamar was observed receiving on the videos include adults and peers flipping over ceramic pieces for him to paint, and adults performing steps in a task for Lamar that required fine motor skills. A preservice teacher also supported Lamar by serving as his scribe for an activity involving writing. Other supports included adults and peers prompting him to perform a task to meet a certain standard, such as thoroughly covering ceramic pieces with glaze.

The preservice teachers stated that they provided most of the support to Lamar because he did not ask the peers for help, and the peers only occasionally offered him supports. Lamar was observed once requesting help from Sandra to bring him some supplies. Deon did not describe providing Lamar with support, but he was observed helping Lamar to paint his centerpieces. Sandra discussed how she would not ask Lamar to get up and gather materials because that would be "very rude" of her and that she helped Lamar to remember to paint everything thoroughly. Sandra also commented on how she thought the preservice teachers did a good job of providing Lamar with error correction without making him feel bad about it. "They were very good about not saying that he did anything wrong … they would just come right up and say, 'Hey, maybe you can help by doing this.' And he'd get right back to it."

Relationship of contextual variables and Lamar's peer interactions. The findings regarding the relationship of the following contextual factors: (a) the composition of the focal group; (b) task type; (c) adult physical proximity to Lamar; and (d) adult prompting; and peer interactions during the inclusive service-learning project are described from the analysis across

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quantitative and qualitative data sources. The findings for the contextual factors include

descriptive statistics for task type, adult physical proximity, and adult prompting. The findings

also include the multivariate regression analysis for the relationship of each of the contextual

factors and peer interactions (see Tables 17-21). The frequencies for all of the contextual factors

recorded are presented in Table 15 for the video observation data and Table 14 for the live

observation data.

Composition of the focal group. The adults and peers described the relationship between

the composition of the focal group and peer interactions in terms of the influence of the common

interest shared between Lamar and Deon. Lamar's group comprised *a willingness to help with a*

mixed common interest group, but the only common interests that were discussed were those

shared by Lamar and Deon. The adults and peers agreed that by having common interests, Lamar

and Deon had a greater frequency of interactions and a stronger connection. The art teacher

described the impact on their interactions. "Yes, if you have something in common with

somebody you're going to have more to talk about, so I think that made a huge difference." The

art teacher went on to describe that Lamar and Deon's connection was through sports. Deon

noted both of his common interests with Lamar increased their ability to interact. "I think it

would be awkward if we just sat there in silence and everybody didn't have much to talk about,

so I think music definitely made us connect with each other; so does sports." Sandra did not

discuss any relationship between her shared interests with Lamar, but did discuss the relationship

for Lamar and Deon. "When [Lamar] would talk about music, I noticed [Deon] was interested."

The preservice teachers explained that Lamar and Deon's conversations about their common

interests decreased Sandra's interactions, "probably, because she was not interested in the same

things like sports or basketball; things they would talk about."

The multivariate regression analysis of the relationship of the composition of the focal group (*willingness to help with a mixed common interest group* compared to a *mixed willingness to help with a shared common interest group*) was conducted by analyzing the data across the four focal groups and by collapsing the interaction data for the two peers for each group. When examining across the entire model for composition of the focal group, all of the peer interaction variables and contextual factors were significantly associated. The greatest proportion of the variance in the model (14.02%) was attributed to the focal student with severe disabilities responding to peers and adults. The relationship between the composition of the group and the following individual peer interaction variables were also significant: the student with severe disabilities initiating and responding to peer and adults, peers in the focal group responding to the focal student, and reciprocal interactions involving the focal student. For students with severe disabilities that belonged to a *willingness to help with a mixed common interest group*, including Lamar, the percent of intervals in which the focal student initiated interactions was 8.7% lower, and 12.23% lower for the focal student responding to peers and adults compared to focal students in a *mixed willingness to help with a shared common interest group*. The percent of intervals in which a peer responded to the focal student in this type of group was 10.93% lower than peers in a *mixed willingness to help with a shared common interest group*. The significant findings from multivariate regression analysis for the composition of the focal group and peer interactions are presented in Table 16 and Table 17.

The findings from the quantitative data regarding the relationship of the focal group composition to peer interactions stands partially in contrast to the perception by adults and peers and relative high frequency of interactions between Deon and Lamar, but when viewed as the interactions of the group as a whole, the findings triangulate. The lack of common interests

shared among the whole group and the perception of a socially divided triad support the quantitative findings that overall, the relationship of belonging to *a willingness to help with a mixed common interest group* was associated with decreased interactions.

    Type of task. The manner in which the adults and peers discussed the relationship between the type of task being performed and peer interactions prevented convergence with the quantitative data analysis for occurrence of interactions involving Lamar and his peers and type of interactions. Only one preservice teacher made a remark regarding how task type was related to the occurrence of peer interactions. The preservice teacher indicated that the students continued to have social interactions while working independently. "When they're each working independently, I'd say they were still having conversations. I'd say the conversations probably slowed them down. If they were silently working on whatever job or task it was, it probably would have gotten done faster." This qualitative data did support the significant quantitative findings regarding a positive relationship between engaging in independent tasks and increased percentage of intervals in which Deon and Sandra responded to Lamar.

    The type of task was associated with the frequency of peers initiating interactions with Lamar, the frequency of Lamar responding to peers and adults, the frequency of peers responding to Lamar, and the percentage of reciprocal interactions involving Lamar. The significant findings from multivariate regression analysis are presented in Table 18 and Table 19. The significant findings from the regression analysis involving collaborative tasks are as follows. The percentage of intervals involving:

- Sandra initiated interactions toward Lamar was 2.08% lower when Deon was engaged in a collaborative task than when he engaged in other task types.

- Sandra responding to Lamar was 34.83% higher when Lamar was engaged in a collaborative task and 47.08% higher when Sandra was engaged in a collaborative task than when either student was engaged in other task types.

- Sandra responding to Lamar was 12.30% lower when Deon was engaged in a collaborative task than when he engaged in other task types.

- Deon responding to Lamar was 72.48% higher when Deon was engaged in a collaborative task than when he engaged in other task types.

The significant findings from the regression analysis involving the students engaged in no tasks are as follows. The percentage of intervals involving:

- Deon initiating interactions toward Lamar was 1.00% higher when Deon was not performing a task than when he engaged in other task types.

- Lamar responding to peers and adults was 60.00% lower when he was not performing a task than when he engaged in other task types.

- Lamar's reciprocal interactions with peers and adults were 61.13% lower when he was not engaged in a task.

- Lamar's reciprocal interactions with peers and adults were 14.09% lower when Sandra was not engaged in a task.

When adults and peers were asked to discuss the ways the students interacted with peers when working collaboratively and when working independently, they described the manner in which tasks were performed or the type of interaction the students engaged in during either collaborative or independent tasks. One of the preservice teachers described that the students would discuss who would gather materials in the group as part of a collaborative task. Sandra described how she engaged Lamar in task related conversation while working independently

painting. "I would ask what patterns [Lamar] wanted when he was painting his pieces. [Lamar] would ask if he could use two different colors, and I said, 'Go crazy. The teachers will tell you if there's something you can't do.'" Sandra also discussed having task related conversations with Lamar while working collaboratively to make centerpieces, in which Lamar would remind her to poke holes in the centerpieces they were making. The regression analysis findings regarding the type of task and type of peer interactions (task related or social) are congruent with the qualitative findings that the peers engaged in task related interactions with Lamar during collaborative tasks. The quantitative findings were not congruent with the qualitative findings that the peers engaged in task related interactions during independent tasks. The significant findings from the regression analysis when Lamar engaged in collaborative tasks are as follows. The percentage of intervals involving:

- the group engaged in a task related interaction with Lamar was 31.25% higher compared to when he was engaged in other task types.
- the group engaged in a social interaction with Lamar was 44.72% lower compared to when he was engaged in other task types.

When Sandra engaged in independent tasks, the percentage of intervals involving the group engaged in a social interaction with Lamar was 10.68% lower compared to when she was engaged in other task types. The greatest proportion of variance in the model examining the relationship of the type of task across the peer interaction variables (46.58%) was found in the relationship across task types and task related interactions.

 Adult physical proximity. The adults and Sandra described adult physical proximity as resulting in decreased social interactions within the focal group. The art teacher noted that the preservice teachers kept the focal group on track by being near them because they "tended to talk

a little bit too much." The preservice teachers also viewed the purpose of remaining near the focal group was to increase productivity. Sandra discussed how having an adult with their group during the sixth session when they were in the community distributing the Ben's Bells allowed the peers to "wander off" from each other. This matched the live observation data, in which 100% of the intervals involved an adult in physical proximity to Lamar, and his focal group peers directed no interactions toward Lamar. The qualitative analysis of the video observation found that during the fifth session when the students were assembling the Ben's Bells, one of the preservice teachers remained with Lamar most of the class session to provide him with support to perform the task. The preservice teacher inadvertently became a physical barrier to social interactions between Lamar and Sandra, as he stood between the two students.

An adult being within three feet of Lamar was associated with the percentage of intervals in which Lamar responded to peers and adults, Sandra responded to Lamar, reciprocal interactions that involved Lamar, and task related interactions. The significant findings from multivariate regression analysis for adult physical proximity and peer interactions are presented in Table 20 and Table 21. The percentage of intervals in which Lamar responded to peers or adults was 35.66% higher, and Sandra responding to Lamar was 6.68% higher, when an adult was in physical proximity to Lamar. The percentage of intervals with reciprocal interactions involving Lamar was 37.64% higher when an adult was in physical proximity to him. The percentage of intervals with task related interactions was 39.29% higher for the focal group when an adult was in physical proximity to Lamar. The greatest proportion of variance in the model (24.91%) was found in the relationship of adult physical proximity to task related interactions. This finding matches the preservice teachers' intended effect of remaining near the focal group to redirect the students' interactions to the task.

Adult prompting. The preservice teachers described adult prompting the focal students to interact as resulting in increased peer interactions, especially interactions involving peers providing supports. The preservice teachers specifically recalled prompting Sandra to help Lamar with tasks and to "take a more significant role in the group" and that this increased her interactions with Lamar and Deon. Sandra described the effectiveness of adults prompting her to interact. "They told me that I should work together, and I should talk to my group … I think it was effective." Sandra also described that following adult prompting she would then talk to Lamar and Deon about getting the work done and would ask them "How are you doing?" Analysis of the videos provided examples of the adults prompting peers to assist Lamar, including a preservice teacher asking Deon to help Lamar paint, followed by Deon talking and providing assistance to Lamar. Fewer instances were observed of the preservice teachers prompting the students to engage socially. During the third video session, one preservice teacher prompted both peers to turn around and work as a group. The peers had been talking to students at another table and were turned away from Lamar. Following this initial adult prompt, the preservice teacher facilitated a discussion about homecoming activities that involved the entire focal group.

In congruence with the qualitative data, adult prompting was found to be significantly associated with the occurrence of peer interaction variables, including peers responding to Lamar, and social and task related interactions. The significant findings from multivariate regression analysis for adult prompting and peer interactions are presented in Table 22 and Table 23. The percentage of intervals involving Lamar initiating interactions was 3.70% higher when an adult had prompted a peer or Lamar to interact. The percentage of intervals in which Sandra responded to Lamar was 8.81% higher when an adult prompted a focal group member or the

entire group to interact. The percentage of intervals with social interactions was 15.20% lower, and the proportion of intervals of task related interactions was 16.30% higher, with adult prompting. The greatest proportion of variance in the model was found in the relationship of adult prompting to task related interactions (12.41%) and for Sandra responding to Lamar (11.92%).

The preservice teachers expressed that a lack of adult prompting was associated with a decrease in peer interactions, in particular group decision-making. Instead of prompting student collaboration, the preservice teachers structured some of their instruction and classroom management in a manner that virtually eliminated the number of decisions the focal group needed to make together. The preservice teachers did not see this as a negative, but necessary to maintain order. "We were not very democratic … I do know that. We made the decisions for them, just to avoid any major classroom management fiascoes."

Roles Lamar assumed during the inclusive service-learning project. Lamar assumed multiple roles across four main role categories during the inclusive service-learning project. The main role categories included group building roles, task completion roles, individualistic roles, and neutral roles. Some roles were described by adults and peers and also observed in the video sessions. Other roles were not described by adults or peers, and were only observed on the videos.

Group building roles. The primary group building roles that Lamar assumed during the project that were triangulated across data sources included that of *conversation starter/maintainer, positive energizer,* and *status equalizer*. The adults described Lamar as the *conversation starter* and Deon discussed how it was easy to talk to Lamar. Lamar often asked peers questions to initiate conversations with them. In different social interactions, Lamar asked

Deon. "Are you going to be on the basketball team this year?" "Why does the football team keep losing?" "Are you going to college?" In other conversations, Lamar told Deon about his job to initiate conversations. "I get paid today." in which Deon would follow up asking him what he was going to buy with his paycheck. Lamar also maintained conversations by responding to questions, indicating he was listening with comments and questions, such as "Wow!" and "Really? What happened?" Lamar consistently assumed the role of *positive energizer*, which meant he brought positive energy to the group. Lamar typically smiled at peers and adults during interactions, laughed often and made others laugh, and joked with Sandra. The adults and peers also described Lamar as "always smiling", "really lightened the mood", and "enthusiastic" about project tasks. As a *positive energizer*, adults and peers described how Lamar "really helped a lot" and "always gave it his all". Lamar also occasionally took on the role of *status equalizer*. As a student with an obvious disability, Lamar would share information about his activities that helped his peers see him as more like themselves. Lamar talked about playing the drums, playing sports, having a job, and using money from his paycheck to buy headphones. Deon noted that it was easy for them to connect because they found common ground, and Sandra was impressed that Lamar had a job. "I didn't know that he had a job at the church playing the drums, which I thought was really cool. I mean, I don't even have a job, so it feels like, 'Dang it [Lamar] you kind of one-upped me with your job'" (Sandra, interview).

Lamar also assumed group building roles that were not discussed by the adults or peers, but were observed through the qualitative analysis of the video recorded sessions, including the roles of *praise provider, praise receiver, discussion contributor, greeter,* and *empathizer*. Lamar served as a *praise provider* for both of his peers during two video sessions. In the third session when the students were painting beads, Lamar complimented Deon's painting design, "Oh snap!

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That one's cool, man." Lamar also told Sandra "good job" when she showed one of her beads to another peer. After Deon finished assembling a Ben's Bell, he held it up for Lamar to see. Lamar responded, "That looks pretty good, boy!" Lamar also assumed the role of a *praise receiver* when Sandra and adults would compliment his work. As a *discussion contributor*, Lamar would most often offer answers to questions posed by the preservice teacher to the whole group as part of a reflection activity. Lamar acted as a *greeter* during two sessions by saying hello or goodbye to Deon, Sandra, an adult, and other peers. As an *empathizer*, Lamar responded to a peer in a manner that showed empathy during three sessions. For example, Sandra made a mistake painting and said, "Oh, I didn't mean to do that. I put four coats on this side." Lamar responded to her, "That's all right, [Sandra]." After Deon told Lamar he was tired, Lamar said, "I feel you, man."

Task completion roles. Lamar assumed a variety of task completion roles that can be grouped according to the function of performing (*task performer, skill deficit contributor, artistic contributor*); offering (*director, decision contributor*); receiving (*direction receiver, assistance receiver*); and requesting (*evaluation requester, clarifier, assistance requester*).

Adults and peers described roles Lamar assumed, in which the function of the role was performing a task. Adults and peers described tasks that he performed within the role of *task performer*, including helping Sandra in finding a piece of cord and assembling the Ben's Bells. Lamar was observed to perform a variety of tasks including creating clay beads, holding level guides while Deon rolled clay, painting beads, glazing beads, and attaching pieces to assemble the Ben's Bells. The role of a *skill deficit contributor* was described by the adults and peers, as well as observed across the video sessions. Within the role of a *skill deficit contributor*, Lamar performed a task, but did so with difficulty, and at times, with poor quality. Both peers

mentioned Lamar as having difficulty painting the centerpieces correctly. The adults also discussed the challenges Lamar had in performing fine motor tasks, especially tying knots when assembling the Ben's Bells. Sandra identified Lamar as assuming an *artistic contributor* role during the first session. "[Lamar] was being very creative with his beads. He wasn't just making sort of a ball or just anything. He wanted to excel."

Lamar assumed two roles with the function of offering his opinions or leadership to the group. One of the preservice teachers and both peers described Lamar as having a *decision contributor* role to help select colors of glaze and decide where to distribute the bells. Lamar was also observed helping Sandra decide which bead to use when assembling the bells. Both peers described Lamar as assuming a *director role* in which he provided leadership by directing a peer or explaining a task. "[Lamar] was like, 'You're supposed to flip those over.' He noticed that I'd painted the same sides" (Sandra, interview). Deon also commented on Lamar leading the group in a *director* role. "When one of us was having a bad day or pouting or something like that, [Lamar] was like, 'Hey, we got to do this, so we need to do this.'"

Adults and peers described roles in which Lamar was the recipient of an action from adults and peers. As a *direction receiver,* peers and adults commented on how well Lamar received instruction to perform tasks. "[Lamar] will often just do what he's told because he wants to impress people, or he wants people to know that he's very capable, and he is" (Sandra, interview). "I think [Lamar] helped that group because-- I think he took instruction well. [Lamar] would do whatever they asked" (Art teacher). Adults and peers described Lamar as assuming a role of *assistance receiver*. The adults commented that Lamar "definitely required some assistance." Peers commented on how they "helped [Lamar] at times." There were several examples across the videos in which Lamar assumed the role of *assistance receiver*. Preservice

teachers would bestow Lamar with the role of *assistance receiver* at times by taking his work

and telling him, "I'm going to help you get caught up." In other instances, Lamar accepted the

role of *assistance receiver* when adults and peers offered him assistance and then waited for him

to accept.

Sandra described one role with the function of making a request from an adult or peer,

and two additional requesting roles were identified on the videos. Lamar assumed a *clarifier* role

when he would ask adults or peers questions about how to perform a task. Within the role of

clarifier, Sandra described Lamar asking her if he could use different colors to glaze when

painting. Lamar was also observed to ask adults clarifying questions about permission slips and

other task related activities. During the two sessions that involved painting, Lamar assumed an

evaluation requester role a few times each session by asking Sandra or a preservice teacher to

evaluate the quality of his work by asking, "Does this look all right?" Sandra was the only

participant to comment on this role by stating that Lamar would smile at adults or peers and wait

expectantly for them to comment on his work. Although Lamar was more frequently offered

assistance, he was observed to assume an *assistance requester* role a few times during the

project. While glazing a bead, Lamar told a preservice teacher, "I think I need some help." He

also asked an adult for assistance while assembling Ben's Bells when he struggled to tie a knot.

Lamar also asked for Sandra's assistance putting away some of the centerpieces he finished

painting.

Individualistic roles. The individualistic roles Lamar assumed during the project were

limited to two types that included *attention seeker* and *ignorer*. Lamar took on an *attention*

seeker role more frequently than the *ignorer* role. In the *attention seeker* role, Lamar would draw

attention to himself by repeatedly making statements or asking questions that were not related to

the task or did not match the topic of a social conversation. The preservice teachers and Sandra described the *attention seeker* role as his preoccupation with leaving for his job, in addition to examples observed on three of the four video observations. "[Lamar] was sometimes concerned with getting to [work] … He was very excited about leaving, so sometimes we had to tell him we needed him to stay in class" (Sandra, interview). Across the observations, Lamar would repeatedly tell peers toward the end of the session, "I need to get out of here." He would also ask Sandra or Deon multiple times, "What time is? Because I need to go to work." Then Sandra would need to convince Lamar that it was not time for him to leave. The *ignorer* role was not described by the adults or peers, and was only observed in a few instances in which Lamar did not pay attention for brief periods while the preservice teachers were presenting the lesson, and when he did not respond when asked a question by an adult or peer.

Neutral roles. Lamar assumed three different types of neutral roles while participating in the inclusive service-learning project, including *task observer, a non-productive socializer,* and *an unnecessary task performer*. Only the role of a *task observer* was described by Sandra and through analysis of the videos. Lamar assumed the role of *task observer* across video sessions when one or both peers were gathering materials or cleaning up at the end of the session. Peers did not ask Lamar to participate in these tasks, and Sandra commented that she did not expect Lamar to gather materials. Lamar did not initiate participation in these tasks, but he instead observed his peers.

The other two neutral roles assumed by Lamar, *unnecessary task performer* and a *non-productive socializer* were not described by the adults or peers, but were observed through qualitative analysis of the video sessions. Lamar assumed the role of *unnecessary task performer* during two video sessions when he performed a task that was not necessary or was no longer

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necessary. For example, Lamar continued holding level guides for Deon while they were creating clay centerpieces for a few minutes after this was necessary because he seemed unaware that he no longer needed to perform this task. Lamar also tied knots in an extra piece of cord while the preservice teacher who was providing supports tied the needed knots to assemble a Ben's Bell. The final neutral role of a *non-productive socializer* was assumed on a few occasions when Lamar was simultaneously performing a group building role by maintaining a conversation, but he also failed to continue performing project tasks, which his peers were performing.

     Profile of roles assumed. The roles Lamar assumed during the inclusive service-learning project were wide ranging, with Lamar assuming roles across the four main role categories. Adults and peers most often remembered Lamar as assuming group building roles, especially those as a *conversation starter* and *positive energizer*. Lamar was also recognized for his contributions within the task completion roles, as a *task performer*. Peers and adults did discuss Lamar's need for supports in his role of *assistance receiver*, which was connected to his role of a *skill deficit contributor*. The adults and peers expressed admiration for Lamar's strength as a *direction receiver*. To a lesser extent, Lamar also assumed neutral roles primarily because he was not asked to perform certain task due to his fine and gross motor challenges. Although Lamar did assume two individualistic roles, these occurred during a relatively small portion of the project. It is noteworthy that adults and peers recognized the individualistic *attention seeker* role that Lamar assumed when he was preoccupied by leaving class for work.

Bea at San Dimas High School Case Description

     Bea, a 20-year-old African-American female with a severe intellectual disability and a physical impairment, was not enrolled in the Introduction to Sculpture class at San Dimas High

School in which the inclusive service-learning project was associated. Bea was invited to join the class during the project, and this was her third semester participating with Ben's Bells. Two Caucasian males who were seniors at the high school joined Bea to comprise a *mixed willingness to help with a shared common interest group*. Peer 1, Neil, responded on the student survey that he strongly agreed to being willing to help his classmates. Peer 2, Jared, responded that he disagreed with the survey statement regarding willingness to help other classmates. Based on the peers' survey responses and information provided by Bea's special education teacher, all three students shared two common interests, including enjoying television comedies and socializing with friends. It was the first time participating in the inclusive service-learning project for both peers.

The adults that were typically present in the classroom during the inclusive service-learning project included the art teacher, three preservice teachers, a graduate student supervisor, and the primary researcher. Although Bea typically was accompanied at all times by her special education teacher or a one-on-one paraprofessional, a special education school staff member typically did not remain in physical proximity to Bea during the inclusive service-learning project. Bea, Neil, and Jared were in attendance for each session of the inclusive service-learning project. Bea's special education teacher brought her to class a few minutes late for two sessions, and Jared arrived several minutes late during the third session. Descriptive statistics were calculated using the data from four video recorded sessions and the sixth live observation session. The multivariate regression analysis was conducted from the video observation data only. A total of 1115 intervals were coded across video sessions and 29 intervals across live observation sessions. The number of intervals coded for video sessions ranged from 224 to 320 intervals. A summary of findings for Beas's case regarding peer interactions and contextual

factors are presented in Table 24. A summary of the roles that Bea assumed is presented in Table 25.

Bea's interactions with peers and adults. Bea's interactions with peers and adults during the inclusive service-learning project can be described by the following categories that emerged from the analysis across quantitative and qualitative data sources: (a) frequency and ease of interacting, (b) type of interaction and common interest interactions, (c) group functioning, and (d) supports. The first two categories involved data that were triangulated across quantitative and qualitative sources. The last two categories of group functioning and supports emerged from the qualitative data sources that expand the understanding regarding how Bea interacted with peers and adults. The descriptive statistics for the video observation data and the live observation data for Bea's focal group are displayed in Table 13 and Table 14, respectively.

Frequency and ease of interacting. The frequency and ease of Beas's interactions with her peers and adults can be described as: (a) challenging at first, but peer interactions became more natural and frequent over the course of the project, (b) preservice teachers had more frequent interactions at the beginning of the project that decreased as peers interacted more, and (c) peers did not consistently recognize Bea's nonverbal attempts to communicate.

The adults described the initial interactions between Bea and her peers, Neil and Jared, as "a little bit forced", that the interactions took "a little bit more effort", and that "everyone was apprehensive." Neil also discussed his initial discomfort with the experience because he was trying to stay in his "comfort zone. I wasn't really trying to reach out and help her as much." Neil explained the reason for the discomfort he initially felt interacting with Bea. "We were totally new to this whole concept of helping special needs kids."

The adults and peers stated, that as the peers became more comfortable with Bea, the frequency of the peers' interactions with Bea increased. The preservice teachers all noted the change in how the peers interacted with Bea. "Then they got used to talking with her, even though she's not going to verbally respond, but it was like natural for them." Another preservice teacher described how as the peers became more comfortable, they interacted with Bea more. "They probably just learned…that you don't really have to back away from people with disabilities, especially people with significant disabilities, because at the end, they are holding her hand and helping her with everything." Another preservice teacher specifically commented on the increased frequency of the peer interactions. "As things continued on, they really started interacting with [Bea] and started talking to her more." Neil also explained that he and Jared learned how to interact more naturally with Bea.

> At first, it was kind of scary and different, so handling it at first, we didn't do as well as handing it towards the end, when we realized how she worked as a person, which gave us a better insight on how we needed to help her. At first, I don't think we had realized that. We were kind of playing in the dark a little bit, but towards the end we had it figured out (Neil, interview).

The perceptions of the adults and peers matched the quantitative analysis of the videos. The peers increased the percentage of intervals in which they initiated interactions with Bea over each video session. Neil initiated interactions and responded to Bea almost twice as often as Jared during the video recorded sessions. Neil had the highest percentage of intervals initiating interactions with Bea during the sixth live observation session. Additionally, the percentage of intervals in which the preservice teachers initiated interactions with Bea decreased over each video observation session.

For the final live observation, when the students distributed the Ben's Bells in the community, a similar pattern to the video observations was found for Bea responding to her peers, including a greater percentage of intervals in which Bea responded to peers and adults than the percentage of intervals in which her peers responded to her. Bea had the highest percentage responding to peers and adults during the sixth session in the community, with 68.97% of intervals, compared to the highest percentage of Bea responding to peers and adults during the video observations in the classroom of 46.88% of the intervals. During the final live session, Neil had a greater percentage of intervals initiating interactions with Bea, than Bea had initiating interactions with peers and adults. Jared did not initiate any interactions with Bea during the sixth live observation, but he did have the highest percentage of his interactions responding to Bea during this session. Few interactions occurred during the live observation sessions in the classroom while the Bea was off camera, with a mean of 1.4 intervals coded per session.

The adults and peers did not discuss Bea's nonverbal attempts to communicate. Bea initiated interactions and responded to peers and adults in a relatively high proportion of intervals compared to her peers. The percentage of intervals in which Bea initiated interactions and responded to peers and adults was greater than the percentage of intervals in which her peers initiated interactions with Bea or responded to her. Bea's initiated interactions in 6.64% of intervals, compared to 1.97% for Neil and 0.99% for Jared initiating interaction with Bea. The percentage of intervals in which Bea responded to peers or adults was 34.17%, which was much higher than the percentage of intervals Neil (11.57%) and Jared (6.10%) responded to Bea. From the qualitative analysis of the video sessions, Bea was observed to initiate and respond to peers and adults primarily through eye gaze, facial expressions such as smiling, reaching for objects,

and touching the arm or hand of a peer or adult. Peers often missed Bea's more subtle communication attempts, such as eye gaze. The quantitative findings indicate missed attempts at communication, with 38.39% of intervals involving Bea's reciprocal interactions.

Type of interaction. Bea's focal group engaged in both social and task related interactions. The adults and the peers did not discuss whether they had more social or task related conversations that involved Bea. Jared stated that their conversations were social, stating that they talked about, "things that have happened recently." Task related interactions involving Bea occurred in 32.11% of intervals, and social interactions occurred during 13.00% of intervals. Some interactions were coded as unknown when it was difficult to determine the communicative intent of Bea's interactions. Unknown interactions involving Bea comprised 4.13% intervals.

Several different topics were discussed during task related interactions, with more task related topics observed on the videos than were described during the interviews. The adults commented that the peers would "talk about the specifics of the project" with Bea and that they would praise her for doing a good job. Neil described the task related interactions in terms of providing assistance to Bea. "Obviously, [Jared] and I were the only people that were able to communicate, so we tried to focus on the project and help Bea." Bea was observed to be engaged in a variety of task related interactions throughout each of the videos. Task related interactions included the peers and adults providing Bea with directions for tasks and Bea responding by performing the task; Bea making task related choices by picking up objects and handing them to a peer; Bea smiling at peers and adults after receiving praise for her work; and an adult asking Bea a question with a peer responding for her. A preservice teacher asked Bea, "Did you pick out more beads for the next one?" Neil replied for Bea by saying, "Yeah, she picked out all of the

beads for this one." The preservice teacher then responded directly to Bea by saying, "That's great, [Bea]. Good job."

The qualitative analysis of the interview and video observations reveals a narrow range of social interactions involving Bea, peers, and adults. The preservice teachers commented on farewells that occurred by describing how the peers "made a point to tell [Bea] goodbye" during the last two sessions. The analysis of the videos found that the majority of social interactions with peers and adults involved greetings or farewells, Bea attempting to gain the attention of a conversation partner, and prompts directed at Bea to "wipe her mouth please" as she regularly had an issue with excess saliva. Other social interactions included adults asking Bea if she was having fun, and Bea reaching out and holding on to the hands of peers and adults. The quantitative and qualitative data reveal that Beas's focal group did not engage in social interactions involving the common interests used to form their group.

Group functioning. The adults and peers described how the group functioned in three ways: (a) the students began working individually, but came together to work well as a team, (b) the group members were respectful of each other and adults, and (c) Bea and her peers enjoyed interacting with each other while participating in the project.

The adults and peers expressed that their group worked very well together after initially working independently, and this was also observed on the videos. Neil described working more as a group. "Personally I got less done, but I felt that as a group, we got more involved together with each other." Jared also commented on how he and Neil made sure Bea was involved with them. "Just making sure that everyone had their hands in on the project. It wasn't just one person working all the time. We made sure everyone was holding their weight." The adults and peers

both expressed that the group worked very well together. Jared commented, "To be honest, I think, we had probably one of the best groups you could have. I think we all did great."

The peers and adults described some of the specific ways the group worked collaboratively. "[Bea] could either hold the paintbrush, and we can get the glaze on there and then move the centerpiece around, or she could hold the centerpiece and then we could paint it." (Neil, interview). One of the preservice teachers recalled that on the day the students created the centerpieces, Bea's group was "collaborating way more than any other table in the room… They were working together to get the clay ready."

The adults and peers used the word respectful to describe the interactions of the peers toward Bea and adults. One preservice teacher also described the peers as always being "friendly, polite, and genuinely caring" toward Bea. Jared also used the word respectful to describe how Bea, Neil, and himself interacted. "I know [Neil] and I, and I know [Bea] is too— all pretty respectable people."

The preservice teachers and the peers described that the whole group enjoyed interacting with each other during the project. One preservice teacher commented on Bea's enjoyment during the distribution in the community.

> She was smiling; she clapped her hands, and I think [Jared] and [Neil] really recognized that she was having a lot of fun and appreciating them. I think that really struck them as, 'Wow! We are doing something cool with her.' (Preservice teacher, focus group interview).

Neil noticed how much Bea enjoyed interacting with the group.

You could tell the longer that we were with her, when she would leave, she would get

upset with her [special education teacher]. You could tell that she wanted to stay with us

because we would actually talk with her and help her do stuff (Neil, interview).

Jared also commented on their enjoyment working together, "[Bea] doesn't talk all that much,

but I can tell that she enjoyed what she was doing. And I like being with her and doing all that."

Jared remarked that all of the group members also had fun with the painting activities.

Supports. The adults and peers described the transformation of the way supports were

provided to Bea over the course of the inclusive service-learning project. These descriptions

matched the manner in which supports were observed to be provided. The adults described how

the preservice teachers provided all of the needed supports for Bea to participate initially. Neil

and Jared both described how it was helpful to be able to ask for help at the beginning.

Gradually, the peers began providing more of the supports. Jared noted that Neil was the first

peer to provide Bea with support. "I'm a little slow-going when it comes to new things. So [Neil]

stepped up, and I saw that…. I'm still warming-up to it, but [Neil's] jumping right in." The peers

also described asking the adults for advice on how to support Bea. "'How do you think we

should do this with her?' That sort of thing." Towards the end of the project when the students

were distributing the Ben's Bells in the community, the adults described how both peers were

taking the initiative to provide Bea with supports by helping her on and off the bus using the

wheelchair lift.

Through the qualitative analysis of the videos, adults and both peers were observed

providing hand-over-hand assistance to Bea. Neil provided Bea with opportunities to accept

support and allowed for greater control and participation by waiting for her to respond to an offer

for support by her grasping either his hand or the object he was holding for her. Jared would

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offer support, but would often not wait for Bea to respond and would pick up her hand and begin providing support during a task.

Relationship of contextual variables and Bea's peer interactions. The findings regarding the relationship of the following contextual factors: (a) the composition of the focal group; (b) task type; (c) adult physical proximity to Bea; and (d) adult prompting; and peer interactions during the inclusive service-learning project are described from the analysis across quantitative and qualitative data sources. The findings for the contextual factors include descriptive statistics for task type, adult physical proximity, and adult prompting. The findings also include the multivariate regression analysis for the relationship of each of the contextual factors and peer interactions (see Tables 17-18 and Tables 26-31). The frequency for all of the contextual factors recorded for Bea's focal group are presented in Table 15 for the video data and Table 14 for the live observation data.

Composition of the focal group. The adults and peers described the relationship between the composition of the focal group and peer interactions in terms of the influence of the common interests shared between all three students. Beas's group comprised a *mixed willingness to help with a shared common interest group*. The adults and peers stated that the group did not discuss the two interests that formed their group, but that having those in common may have helped them work together better. The art teacher and one of the preservice teachers discussed how their common interest of enjoying hanging out with friends represented the way they interacted in the group by being social with each other. The preservice teachers described this quality in Bea and how the peers were receptive.

> [Bea] really likes when people will walk right up to her and say her name because she
>
> will put her hand up to hold your hand…That's like hanging out with friends…[Neil and

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Jared] weren't afraid to do that…They seem like social people, so if she put up her hand

to get some sort of interaction, they seemed fine with it (Preservice teacher, focus group

interview).

Neil commented, "If people share a common interest, they're going to obviously work better

than people who are different. You could tell by the way that we acted with each other that

everything went smoothly."

The multivariate regression analysis of the relationship of the composition of the focal

group (*mixed willingness to help with a shared common interest group* compared to *willingness*

to help with a mixed common interest group) was conducted by analyzing the data across the

four focal groups and by collapsing the interaction data for the two peers for each group. For

students with severe disabilities that belonged to a *mixed willingness to help with a shared*

common interest group, including Bea, the percentage of intervals in which the student with

severe disabilities initiated interactions was 8.7% higher, and 12.23% higher for students with

severe disabilities responding to peers than the focal students in a *willingness to help with a*

mixed common interest group. The percentage of intervals in which a peer responded in this type

of group was 10.93% higher than the peers in a *willingness to help with a mixed common interest*

group. The significant findings from multivariate regression analysis for the composition of the

focal group and peer interactions are presented in Table 16 and Table 17.

The findings from the quantitative data regarding the relationship of the focal group

composition to peer interactions is congruent with the perception of the adults and peers that

having common interests helped the group work well together and that the peers were open to

Bea's social initiations. The quantitative findings are triangulated with the qualitative analysis of

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the videos, in which both peers were observed holding Bea's hand if she offered it to them. Both peers also engaged in task related interactions with Bea by providing hand-over-hand support.

Part of the composition of the focal group included the peers having opposite willingness to help responses on the student survey. Jared had responded to the survey question that he disagreed with the statement regarding willingness, and Neil had agreed with the statement. Jared described Neil as being the first to provide Bea with support, and that he followed Neil's lead in working with Bea. Neil also had a greater percentage of intervals with responding to Bea (11.57%) compared to Jared who responded to Bea during 6.10% of intervals.

Type of Task. One preservice teacher and Neil discussed the relationship between the type of task and peer interactions. The preservice teacher indicated that the students had task related interactions when they were working collaboratively to make group decisions and discuss project tasks. "They talked about beads, shapes, and that kind of stuff, and actually had conversations about the project." Neil discussed that when the group members were working independently creating the beads and centerpieces that he and Jared did not "really interact with [Bea] as much." Bea, Neil, and Jared were observed to engage in task related interactions and social interactions while working on collaborative tasks. The peers were also observed to engage in social conversations that did not include Bea while working on independent tasks, and they took turns engaging in collaborative tasks with Bea, with fewer instances of the whole group working together.

The type of task was associated with the percentage of intervals in which peers initiated interactions with Bea, Bea responded to peers and adults, peers responded to Bea, reciprocal interactions that involved Bea, and social and task related interactions. The significant findings from multivariate regression analysis are presented in Table 26 and Table 27. When students in

the focal group were engaged in collaborative tasks, peer interactions with Bea increased. The exception was when one peer was engaged in a collaborative task, the other peer was less likely to be engaged in an interaction with Bea. This matches the qualitative findings that the peers tended to take turns working collaboratively with Bea. The significant findings from the regression analysis involving collaborative tasks are as follows. The percentage of intervals involving:

- Neil initiating interactions toward Bea was 4.53% higher when he was engaged in a collaborative task, and 4.03% lower when Jared was engaged in a collaborative task.

- Jared initiating interactions toward Bea was 3.70% higher when he was engaged in a collaborative task than when he engaged in other task types.

- Bea responding to peers and adults was 13.67% higher when she was engaged in a collaborative task than when she engaged in other task types.

- Neil responding to Bea was 12.58% higher when he was engaged in a collaborative task, and 6.17% lower when Jared was engaged in a collaborative task.

- Jared responding to Bea was 18.11% higher when he was engaged in a collaborative task, and 9.61% lower when Neil was engaged in a collaborative task.

When Bea engaged in independent tasks, the percentage of intervals involving:

- Bea responding to peers and adults was 15.12% lower than when she engaged in other task types.

- Bea's reciprocal interactions with peers and adults were 20.63% lower than when she engaged in other task types.

When Bea was not engaged in a task, the percentage of intervals involving:

- Bea responding to peers and adults was 37.55% lower than when she engaged in other task types.

- Bea's reciprocal interactions with peers and adults were 43.00% lower than when she engaged in other task types.

The regression analysis findings regarding the type of task and type of peer interactions (task related or social) are congruent with the qualitative findings that the peers engaged in task related interactions with Bea during collaborative tasks and tended to not interact with Bea socially during independent tasks. When Bea was engaged in a collaborative task, the percentage of intervals the group engaged in a task related interaction with Bea was 18.55% higher compared to when she was engaged in other task types. When Bea engaged in independent tasks, the percentage of intervals involving the group engaged in social interactions with Bea was 14.86% lower than when she engaged in other task types. The greatest proportion of variance in the model examining the relationship of task type across the peer interaction variables (22.94%) was found for the percentage of intervals in which Bea responded to peers and adults.

Adult physical proximity. The preservice teachers, art teacher, and peers each had different perceptions of how adult physical proximity to Bea influenced peer interactions. The preservice teachers described that adult physical proximity to the focal group decreased peer interactions. "I think the more we stepped back, the more they worked together." The art teacher discussed the relationship of adult physical proximity to the group in terms of the comfort level of the peers. She thought that the peers became more comfortable interacting with Bea knowing that an adult was nearby to provide her support if it was needed. The peers discussed that adult physical proximity was not needed for them to be productive, but did not comment on whether it impacted the frequency or type of interactions they had with Bea.

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The findings from the multivariate regression analysis are in contrast to the perceptions of the preservice teachers that adult physical proximity resulted in decreased interactions. The significant findings from multivariate regression analysis for adult physical proximity and peer interactions are presented in Table 28 and Table 29. An adult being in physical proximity to Bea was found to be associated with the percentage of intervals in which Neil initiated interactions with Bea, Bea responded to peers and adults, peers responded to Bea, reciprocal interactions involving Bea, and social and task related interactions. The percentage of intervals in which Bea responded to peers and adults was 40.17% higher when an adult was in physical proximity to Bea. The percentage of intervals in which Neil responded to Bea was 8.68% higher when an adult was in physical proximity. The proportion of reciprocal interactions involving Bea was 51.11% higher when an adult was in physical proximity to her. Social interactions involving Bea were 19.45% higher and task related interactions involving Bea were 33.20% higher when an adult was in physical proximity to Bea. The greatest proportion of variance in the model was found in the relationship of adult physical proximity to Bea responding to peers and adults (13.51%) and task related interactions (11.02%).

Adult prompting. The preservice teachers and Neil described adult prompting as resulting in increased peer interactions, especially interactions involving peers providing supports. The preservice teachers specifically recalled that their prompting began as modeling for the peers on how to provide supports. Then the preservice teachers suggested that the peers could work with Bea in the same manner. This resulted in the peers interacting with Bea by providing her with supports. One preservice teacher described modeling the use of a support strategy and then prompting its use, "We mostly did hand-over-hand rolling of the clay, and slowly, as the boys started [working], I was telling them that they could help us as well and do what I was doing.

Then they started helping her as well." Neil described the influence of the preservice teachers prompting him and Jared to interact with Bea. "In the beginning, they advised us how we should help [Bea] without being overly pushy…and not making her do too little, which was very beneficial for us to get the ball rolling."

The preservice teachers also described how the peers, over the course of the project, began interacting without prompting, but that peers occasionally still needed a prompt to interact. One preservice teacher commented that she prompted Jared to work together with Bea to assemble the Ben's Bells. "If you and [Bea] want to make one together instead of each doing a separate one, you could do that." Jared was struggling to follow along with the directions for the task, and he did not begin working with Bea until the special education teacher made a suggestion for how they could work together with Bea picking out the beads to use. The preservice teachers came to the realization that they needed to prompt the peers to interact because of their lesson structure. "When I gave them the materials, maybe I should have just given them one set because then they would have realized, 'Oh yeah. We were supposed to do this as a team.'" During that session, the preservice teachers handed out an individual set of materials to each student as opposed to the typical procedure of giving the students a photo supply card for the whole group.

Qualitative video analysis provided additional instances across sessions of the adults prompting peers to interact with Bea, which resulted in the peers initiating an interaction or responding to Bea, including the following examples. The special education teacher told the peers that Bea could help them roll the clay and pick out beads to use, and the peers began asking Bea to participate using the special education teacher's suggestions. The preservice teachers suggested how the students might paint together, and explained to the peers how Bea could make

a choice by presenting her with three objects. The peers then offered paint choices to Bea. The art teacher asked the students how they were working together on a painting task and described what another group was doing to work collaboratively. The peers then began interacting with Bea again, with one peer offering her a turn to paint with supports. In each of these instances peer interactions increased following the adult prompt to interact.

In congruence with the qualitative data, adult prompting was found to be associated with peer interactions within the quantitative analysis. The significant findings from multivariate regression analysis for adult prompting and peer interactions are presented in Table 30 and Table 31. The proportion of intervals in which Neil responded to Bea was 18.00% higher with adult prompting, and 10.7% higher for Jared following adult prompting. The adults described their prompting as focused on encouraging the focal group to work collaboratively. This is consistent with the quantitative analysis, in which the percentage of intervals with social interactions involving Bea was 10.71% lower with adult prompting, and the percentage of intervals of task related interactions was 20.25% higher with adult prompting. The greatest proportion of variance in the model was found in the relationship of adult prompting to responses by Neil (2.74%) and responses by Bea (2.35%).

Bea's roles during inclusive service-learning. Bea assumed multiple roles across four main role categories during the inclusive service-learning project. The main role categories included group building roles, task completion roles, individualistic roles, and neutral roles. Some roles were described by adults and peers and also observed in the video sessions. Other roles were not described by adults or peers, and were only observed on the videos.

Group building roles. The primary group building roles that Bea assumed during the project that were triangulated across data sources included that of *new disability-related*

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experience provider, collaborative purpose provider, positive energizer, and *praise receiver.* The art teacher, preservice teachers, and both peers described Bea's role as a *new disability-related experience provider.* The art teacher described this role as, "[Bea], I think she affected the group by just being there. Just giving them the opportunity to work with her." One of the preservice teachers stated that the peers learned how to help Bea with her personal care when she had excess saliva and that this was something they probably would have never thought to do before working together in the group. Both peers also discussed how they had "never worked with someone like [Bea] before", and that working with someone like Bea was a "great learning experience." Video observations contained examples of the peers asking for advice about how to best work with Bea or that they had understood from a preservice teacher's model the best approach to use. Neil even passed on new knowledge to Jared on a day he arrived late to class.

As a *collaborative purpose provider,* Bea provided the reason for the students to work together on tasks that might have otherwise been accomplished independently. One preservice teacher commented, and the others agreed, that Bea had a *collaborative purpose provider* role.

> I think she was the reason that they worked together, because if it was just [Neil and Jared], they would have probably each made their own bell…But because [Bea] was there, and she couldn't do all the little steps by herself, they would all work together. So she was the reason that they worked as a team (Preservice teacher, focus group interview).

Neil also commented on Bea serving in this role, as he and Jared were "understanding of other people and realizing that sometimes we have to do more to help them, which really helped us work together." During one video session, Neil provided Bea physical support to paint a

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centerpiece together, and Neil asked Jared for assistance getting more paint on their brush. Following this interaction, Neil exclaimed, "Teamwork!"

The preservice teachers and Neil also described Bea as assuming the role of *positive energizer*, by smiling and expressing interest in tasks through her nonverbal communication. The preservice teachers and Neil discussed her assuming this role during the distribution of the Ben's Bells in the community. One preservice teacher commented on how she smiled, clapped, and reached out to hold one of their hands during this activity, and "that really signaled to them that she was very interested in the project." Neil also described how excited Bea was to hang the bells together.

The preservice teachers described Bea as serving the role of a *praise receiver*. The preservice teacher recalled the peers would tell Bea "good job" or compliment her work. "These colors that you put together look really nice." Adults and peers provided Bea with praise throughout the project. During one session, Neil held up a finished Ben's Bell and said to Bea, "Look at what we made!" In some instances, the peers responded for Bea when she was praised, such as when one preservice teacher asked Bea, "Did you pick out more beads for the next one?" and Neil answered for her, "Yeah, she picked out all of the beads for this one." The preservice teacher responded to Bea, "That's great, Bea. Good job."

Bea also assumed group building roles that were not discussed by the adults or peers, but were observed through the qualitative video analysis, including the roles of *conversation starter/maintainer*, *greeter,* and *outsider seeking a way in*. Bea was observed serving as a *conversation starter/maintainer* and a *greeter* through eye gaze, facial expressions, such as smiling, and gestures. At times, Bea assumed the role of an *outsider seeking a way in* because

she would attempt unsuccessfully to gain attention of her peers through eye gaze, and she did not have access to a more effective means to communicate.

Task completion roles. Bea assumed a variety of task completion roles that can be grouped according to the function of performing (*task performer, skill deficit contributor*); offering (*decision contributor, materials sharer*); receiving (*assistance receiver, direction receiver*); and exploring (*materials examiner*).

Adults and peers described roles Bea assumed, in which the function of the role was performing a task. Adults and peers described the variety of tasks Bea performed within the role of *task performer*. The preservice teachers described how Bea rolled out the clay, painted the first layer on centerpieces, and helped to pull knots tight. Neil described Bea painting the pieces, and Jared described how she cut out the shapes in the clay. Jared also described her as a *task performer* by stating, "I think [Neil] and I made sure [Bea] was getting her fair share of work in, because she cut a lot of those, and she did her job." Within the role of a *skill deficit contributor*, the art teacher and Jared described Bea as having difficulty performing tasks because of her motor skill challenges. Jared stated, "She could only do so much with [assembling the bells] because there's a lot of knot tying." In the role of a *decision contributor*, the preservice teachers and Neil described Bea as selecting colors for the group to use to paint and selecting beads to use while assembling the Ben's Bells. Bea was also observed on the video to pick out the shape of the cookie cutter to use on the clay. Jared placed the three cookie cutters in front of Bea, and then both Neil and Jared asked Bea, "Which one do you want to do?" Bea selected the shape she wanted.

Bea assumed two roles with the function of offering by participating in decision making for the group or sharing materials with her peers. The preservice teachers and peers described

Bea as assuming a role of *decision contributor* by helping the group select colors of glaze and beads to use when assembling the Ben's Bells. One preservice teacher stated, "They would have her make the choices with the colors, the beads." Although not described by adults or peers, Bea assumed a *materials sharer* role when a peer or adult would ask Bea to hand them project materials that were near her on the table, such as a paintbrush, pliers, and a bell, and she would respond by giving the items to the person who requested it.

Adults and peers described roles in which Bea was receiving an action from adults and peers. Adults and peers described Bea as assuming the task completion role of *assistance receiver*. The art teacher, preservice teachers, and both peers described how Bea received assistance to perform tasks or join in activities with the group. Neil stated that he and Jared "took turns pushing [Bea] in her wheelchair, taking her to different places. We helped her on and off the bus, and hanging her bells." Jared stated, "I think [Neil] helped [Bea] a lot in what we were doing. I mean, we both helped in that." As a *direction receiver*, Bea frequently received instruction from adults and peers to perform tasks. Although not described by adults or peers, both were observed to provide Bea with directions, such as Neil asking Bea, "Can you push it this way?" while Bea was rolling out clay and a preservice teacher directing Bea to "dip her paintbrush" in the glaze while they were painting beads.

Bea assumed one role with the function of exploring project materials, which was observed on the videos, but not described by adults or peers. In the role of *materials examiner,* Bea would examine the project materials that were placed on the table near her or were handed to her by an adult or peer. During the session assembling the Ben's Bells, Bea was requested to pick out the beads to use. She was observed to pick up beads, holding them up to look at them closely before she handed the beads to a peer or back into the box.

Individualistic roles. The individualistic roles Bea assumed during the project were limited to two types that included *ignorer* and *social skills offender*. The adults and peers did not describe Bea assuming either of these individualistic roles. The *ignorer* role was only observed in a few instances in which Bea did not pay attention for brief periods while the preservice teachers were presenting the lesson. Bea only assumed the *social skills offender* role once during the project in which she was communicating her displeasure that her special education teacher was telling her it was time to leave the art class. Bea pulled hard on her special education teacher's hand in front of her peers, and the special education teacher said to Bea, "Be careful. Be nice."

Neutral roles. Bea assumed two different types of neutral roles while participating in the inclusive service-learning project, including *task observer and dependent non-participant*. The art teacher and Neil described Bea as assuming the role of a *task observer*, and Bea was observed across the video sessions assuming this role. Bea would assume this role when the peers were performing tasks, such as gathering materials or independently performing tasks, and she was not receiving supports to participate. The art teacher described that she did not recall seeing Bea assembling the Ben's Bells, and that she thought it was more that the peers "were showing her how it was done." Neil described Bea watching while he and Jared hung up the Ben's Bells in the community.

Bea assumed the role of a *dependent non-participant* when she was being denied the opportunity to engage in a group building or task completion role. This role type was observed during the video sessions, but was not described by adults or peers. Bea served in this role for three primary reasons. The most frequent reason was because Bea was not provided the means or opportunity to communicate. This occurred when Bea did not have a means to respond to a

question, or the adults or peers talked about Bea as if she was not present, instead of directing their interactions toward Bea. For example, as Neil sat next to Bea, instead of telling Bea directly, he told a preservice teacher, "She can have this one if she wants to decorate it." The second most common reason Bea assumed a *dependent non-participant* role was that she was not positioned properly to be able to see instruction or engage in an activity. Occasionally, the preservice teachers did not remember to position Bea in her wheelchair to be able to view the lesson presentation. The peers also did not recognize this need for support, and in one instance, they began to perform tasks while Bea was still turned away from the table to view the directions. The final reason Bea assumed a *dependent non-participant* role was that Bea was brought late to class for two sessions, and she missed part of the activities.

Profile of roles assumed. Bea assumed a variety of roles across the four main categories during the inclusive service-learning project. Adults and peers most often remembered Bea as assuming group building roles and task completion roles, especially those as a *new disability-related experience provider, collaborative purpose provider, positive energizer, assistance receiver, and task performer.* To a lesser extent, Bea also assumed two neutral roles of a *task observer* and a *dependent non-participant*. The second neutral role was assumed more frequently because Bea did not have the opportunity to engage in tasks or the means to communicate effectively. Although Bea assumed two individualistic roles, these occurred very infrequently. Adults and peers did not describe Bea as assuming any individualistic roles.

David at Main North High School Case Description

David, a 16-year-old Caucasian male with a moderate intellectual disability, was not enrolled in the Art Survey class at Main North High School in which the inclusive service-learning project was associated. David was invited to join the class during the project and this

was his second semester participating in Ben's Bells. Two Caucasian females who were sophomores joined David to comprise a *mixed willingness to help with a shared common interest group*. Peer 1, Freda, responded on the student survey that she disagreed with being willing to help other classmates. Peer 2, Regina, responded that she agreed with the willingness to help survey question. Based on the peers' survey responses and information provided by David's special education teacher, all three students shared one common interest, that they all enjoyed the same popular science fiction television show. It was the first time participating in the inclusive service-learning project for both peers.

The adults that were typically present in the classroom during the inclusive service-learning project included the art teacher, the art teacher's student teacher, three preservice teachers, a graduate student supervisor, and the primary researcher. David, Freda, and Regina were in attendance for each session of the inclusive service-learning project. Each week, David would leave class approximately five minutes early to take a bus home through special education transportation services. Descriptive statistics were calculated using the data from five video recorded sessions. The multivariate regression analysis was conducted from the video observation data only. A total of 1304 intervals were coded across video sessions, with a range of 250 intervals per session to 282 intervals per session. A summary of findings for David's case regarding peer interactions and contextual factors are presented in Table 32. A summary of the roles that David assumed is presented in Table 33.

The descriptive statistics for the video observation data and the live observation data for David's focal group are displayed in Table 13 and Table 14, respectively. The frequencies for all of the contextual factors recorded are presented in Table 15 for the video data and Table 14 for

the live observation data. The significant findings from multivariate regression analysis for each of the contextual factors and peer interactions are presented in Tables 16-17 and Tables 34-39.

Matt at Hill Valley High School Case Description

Matt, a 16-year-old Caucasian male with a moderate intellectual disability was not enrolled in the Advanced Painting class at Hill Valley High School in which the inclusive service-learning project was associated. Matt was invited to join the class during the project. Matt previously participated in the inclusive service-learning project once before. He joined two peers in the class who were both juniors at Hill Valley High School. Together they comprised a *willingness to help with a mixed common interest group*. Peer 1, Carrie, and Peer 2, Ann were both Caucasian females. Both peers responded on the student survey that they agreed with the survey question regarding willingness to help other classmates. Carrie shared a common interest with Matt of enjoying video games. Anne shared a common interest with Matt of enjoying going to the movies.

The adults that were typically present in the classroom during the inclusive service-learning project included the art teacher, the art teacher's student teacher, a paraprofessional, three preservice teachers, a graduate student supervisor, and the primary researcher. Matt and Carrie were in attendance for each session of the inclusive service-learning project, although Matt was late to every session, ranging from a couple minutes in some sessions to almost 20 minutes during one session. Ann was absent during two of the inclusive service-learning project sessions. Descriptive statistics were calculated using the data from four video recorded sessions and the sixth live observation sessions. The multivariate regression analysis was conducted from the video observation data only. A total of 819 intervals were coded across video sessions and 32 intervals across live observation sessions. The number of intervals coded for video sessions

ranged from 156 to 238 intervals. A summary of findings for Matt's case regarding peer

interactions and contextual factors are presented in Table 40. A summary of the roles that Matt

assumed is presented in Table 41.

The descriptive statistics for the video observation data and the live observation data for

Matt's focal group are displayed in Table 13 and Table 14, respectively. The frequencies for all

of the contextual factors recorded for Matt's focal group are presented in Table 15 for the video

data and Table 14 for the live observation data. The significant findings from multivariate

regression analysis for each of the contextual factors and peer interactions are presented in

Tables 16-17 and Tables 42-47.

Chapter 5

Discussion

The purpose of this investigation was to provide a preliminary understanding of how high school students with severe disabilities interact with peers and adults during inclusive service-learning. Within this research, the relationship between specific contextual factors and peer interactions were also examined. Additionally, this study presents a foundational understanding of the informal roles students with severe disabilities assumed while participating in service-learning within a small group of peers without severe disabilities. This discussion will focus on the key findings across the four focal students with severe disabilities. The limitations of this investigation are described, and recommendations for future investigations and inclusive service-learning practice are presented.

This study yielded several main findings for each research question. For the first research question, students with severe disabilities had interactions with peers during inclusive service-learning that ranged in frequency and ease from natural to challenging; the majority of interactions were task related; adults and peers had positive perceptions of group functioning; and adult interactions occurred primarily within the function of providing supports. For the second research question, the specific contextual factors examined were each found to be related to peer interactions, including the composition of the focal group being positively related to peer interactions when a connection was made involving a common interest; collaborative tasks were related to increased task related interactions; adult physical proximity was related to students having increased task related interactions; and adult prompting was positively associated with increased peer interactions, especially those involving collaboration. For the third research question, the students with severe disabilities assumed a variety of roles that fell within the three

categories described in the literature: group building roles, task completion roles, and individualistic roles. An additional role category, neutral roles, emerged through the qualitative analysis.

The contextual factors that were examined and the level of communication and social skills of the students with severe disabilities each played a critical role in peer interactions that occurred and the roles these students assumed during inclusive service-learning. The selective use of adult physical proximity facilitated peer interactions when adults prompted peers or the student with severe disabilities to interact. The adults also modeled appropriate interactions and demonstrated providing supports to the student with severe disabilities that resulted in increased peer interactions. When adults facilitated peer interactions, students with severe disabilities also had increased opportunities to assume group building roles and task completion roles.

For students with severe disabilities, having greater communication and social skills was associated with increased peer interactions and students with severe disabilities assuming a wider variety of group building and task completion roles. These skills enabled students with severe disabilities to engage peers in extended conversations over a wider range of task related and social topics. Conversely, lack of access to an effective communication system or fewer social skills significantly hindered peer interactions and led to students with severe disabilities assuming individualistic roles by demonstrating challenging behaviors or passive neutral roles.

Collaborative tasks were associated with increased peer interactions and provided students with severe disabilities and their peers with a purpose for engaging in interactions and opportunities to assume task completion roles. Purposefully grouping students with severe disabilities with peers by common interests provided conversational opportunities for students with severe disabilities when the students became aware of this connection. Adults may need to

facilitate social conversation by highlighting shared common interests for the peers and students with severe disabilities. *Figure 2* presents the main factors that were positively associated with increased peer interactions for students with severe disabilities. *Figure 3* illustrates the factors that influenced the roles assumed by students with severe disabilities.

Limitations

The findings from the present study provide insights into the interactions of students with severe disabilities, related contextual factors, and the roles students with severe disabilities assumed during inclusive service-learning. It is also important to note several limitations that should be considered when interpreting the findings.

First, the service-learning project was facilitated by special education preservice teachers under the supervision of a faculty member in special education and doctoral students. Even though the preservice teachers were provided lesson plans and feedback on their performance, the manner in which the three preservice teachers in each class interacted with students may differ from the way general education teachers or even an experienced special education teacher would typically interact with students with severe disabilities during inclusive service-learning.

Second, although the video recorded observation data provided an opportunity to examine peer interactions, contextual factors, and roles with greater depth and breadth than only live observation would allow, the students may have altered their interactions due to reactive effects from the video camera. Normative data collected for all of the interactions of the focal group peers, instead of only those directed toward the focal students, would have strengthened the findings of this investigation in regards to comparing the relative frequency of interactions.

Third, the 10-second recording procedure only allows for an estimate of the occurrence of the peer and adult interactions and contextual factors examined. Additionally, data from one

video session for three of the students was unable to be analyzed, and data was not able to be collected during the final live observation session for one of the focal students.

Fourth, the use of semi-structured interviews made comparisons between the interview data and the quantitative findings challenging, at times, when the participants did not provide information that confirmed or disconfirmed the quantitative data collected. For example, the preservice teachers often described how students worked on the project rather than the relationship between the type of task and peer interactions.

Fifth, youth voice is often emphasized in the literature as a crucial service-learning component, which often includes students working with teachers to select the service-learning project. The service-learning project that provided the context for this study was pre-determined before implementation. This limited the opportunity to examine how students with severe disabilities interacted during the typical preparation/planning phases of the service-learning project.

Lastly, although several measures were taken to ensure the trustworthiness of the data, the findings were interpreted through the reflexive lens of the researcher's disclosed biases.

Peer and Adult Interactions

Peer and adult interactions were influenced by a number of variables including the communication abilities of the student with severe disabilities, awareness of a shared common interest, type of task, group functioning, and the manner in which supports were provided. The three focal students who had significant communication, social, and/or behavioral challenges had more difficulty interacting and connecting with peers than the one focal student who had greater communication skills, which he used to initiate interactions with a peer around common interest areas. With the exception of Lamar's focal group, the frequency and ease of interactions were

commonly described as challenging, and social interactions occurred with low frequency. A similar pattern was found for the relative lower frequency of Bea, David, and Matt responding to peers and adults compared to the higher relative frequency of Lamar responding to peers and adults. Although Bea had the highest frequency of initiations of the four focal students, peers often missed Bea's attempts to communicate nonverbally, and she did not have a more effective means to communicate that might gain her peers' attention beyond use of eye gaze, facial expressions, and gestures. At other times, peers would ask Bea a task related question, but would not provide enough time for her to respond before repeating their question two or three more times. David's peers made the most effort to interact socially of the three focal groups with challenging interactions, including greeting him, saying farewells, and asking him how he was feeling, but David would often only smile or whisper single word responses to his peers. Matt tended to ignore the peers in his focal group, and would occasionally shout out phrases unrelated to the interactions occurring in the classroom, which seemed to make the peers uncomfortable and unsure of how to respond to him.

The finding that most of the focal students had relatively low frequency of interactions for students with severe disabilities is consistent with that found in previous investigations of peer interactions in general education high school classrooms, with each researcher stating that intentional efforts to foster peer interaction are needed (Carter et al., 2008; Chun, 2009; Mu et al., 2000). Also congruent with previous research are the expressions of discomfort by peers when confronted with the experience of attempting to communicate with a student with a severe disability who has limited communication skills or demonstrates challenging behavior (Helmstetter, Peck, & Giangreco, 1994). These findings suggest that regardless of how often peers attempt to interact with students with severe disabilities, if students with severe disabilities

do not have the social or communication skills to maintain conversations or if peers do not understand the manner in which students with severe disabilities communicate, the frequency of peer interactions will remain low. Students with severe disabilities may require social skills instruction to gain competence in initiating and maintaining conversations, such as through self-prompting strategies (Hughes et al., 2002; Hughes et al., 2004) or to replace socially inappropriate behaviors (Halle, Bambara, & Reichle, 2005). Adults may need to provide peers with information regarding the manner in which the student with severe disabilities communicates (Carter et al., 2011; Carter et al., 2007).

Students with severe disabilities who have greater social and communications skills may still benefit from additional supports and instruction to increase the quality of interactions (Gresham, Van, & Cook, 2006). In the case of Lamar, he would become preoccupied with talking about leaving for his job at the end of each session. He repeatedly asked his peers for the time of day and made statements about needing to get out of the classroom. These interactions were not supportive of building relationships with his peers because the peers may have believed that Lamar was not interested in remaining with the group, and one peer seemed irritated by his repeated questions about the time.

The focal students with severe disabilities engaged in both task related and social interactions, with the majority of conversations involving task related interactions. Lamar's group was the exception, with a similar frequency for task related and social interactions. Across the focal groups, the students with severe disabilities contributed to task related conversations by offering opinions during group discussions and participating in group decision making, as well as being the recipient of task related interactions, such as receiving directions and praise by adults and peers. With the exception of Bea, all of the focal students engaged in task related interactions

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involving requesting assistance. Not surprisingly, the student with the greatest communication abilities engaged in a wider variety of task related interactions. Lamar engaged in the following additional types of task related interactions: requesting clarification of tasks, requesting evaluations of his work, offering to take turns working on a task, and directing peers in a task. The finding that task related interactions were more frequent than social interactions is consistent with previous research regarding the type of interactions students with and without disabilities have in general education settings (Carter et al., 2005; Mu et al., 2000). The collaborative nature of many of the tasks involved in the service-learning project and the multiple adults facilitating the project may explain the reason for greater task related interactions. Members of Lamar's group tended to be able to carry on social conversations with him while everyone continued to work on tasks. The finding that the focal student with the greatest communication skills also had interactions that were more social in nature compared to the focal students with more significant communication challenges is consistent with the findings of Hunt et al. (1994) that elementary students with severe disabilities with less significant support needs had more social interactions than task related interactions with peers than students with severe disabilities with greater support needs.

Across the focal groups, the students with severe disabilities and peers engaged in social interactions, with three of the focal students involved in limited social interactions with a narrow range of topics, while Lamar engaged in frequent social interactions with his peers with a wide range of topics discussed. Lamar most frequently initiated social interactions around his common interests with Deon, his job, and money. Lamar and his peers initiated social interactions involving current events at school, families, movies, school club participation, greetings, and farewells. Bea's group had the narrowest range of social topics discussed with greetings,

farewells, and peers directing Bea to manage a personal care issue occurring most frequently. In Matt's group, the only unprompted social interactions that occurred were that of greetings and the peers laughing when Matt was teasing another student. Adults facilitated a few other social interactions in Matt's group by asking the students questions about current events at school, pets, and favorite holidays. Both David and his peers initiated social interactions, including a few social interactions involving music, hairstyles, clothing, and asking for the name of a peer. David's peers also initiated greetings and farewells with David. The conversational topics discussed within the focal groups matched those found by Carter et al. (2005) when examining the interactions of high school students with severe disabilities and their peers across school contexts, including general education classes, with one exception. The following social conversation topics: jobs, money, school social events, and movies were discussed in Lamar's group, but were only discussed in contexts outside of the general education classroom in the study by Carter et al. (2005). Inclusive service-learning may provide a context in which interactions involving a wide range of social interactions between students with severe disabilities and peers are possible.

With the exception of one peer in Matt's group, the adults and peers had positive perceptions of how the groups functioned. Adults and peers discussed the importance of the peers and the students with severe disabilities treating each other and adults with respect. The characteristic of respectfulness appeared to be foundational for the students to work collaboratively, listen to adults presenting the lessons, and for the peers to provide the focal students with supports as needed. The positive perceptions of the adults and peers for the focal groups involving Lamar, Bea, and David indicate that students with severe disabilities and peers can work well together during inclusive service-learning. Matt's group was the exception

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because they experienced difficulty working together. At times, Matt's peers would ignore his inappropriate behavior, and would exclude him from group decisions. At other times, the peers encouraged Matt's challenging behavior by laughing when he was teasing another student. The issues involved with the peers and Matt's challenging behavior indicates the necessity of clearly stating expectations for behavior for all students, providing positive behavior supports, and providing some groups with greater instruction in working collaboratively during inclusive service-learning.

The frequency of interactions adults had with students with severe disabilities were most often discussed in terms of how often supports were provided to either the focal student or the whole group. The frequency of supports and the support providers varied among each focal group, with adults providing the majority of supports for Lamar across the sessions and during the initial sessions for Bea. Adults provided fewer supports to David and Matt, with peers providing a greater amount of support in each of these two focal groups, the exception was when an adult provided the entire focal group support during the challenging task of assembling the Ben's Bells. For the two focal groups in which adults provided fewer supports, the adults also had less frequent interactions with the focal students.

The communication abilities of the focal students appeared to influence the frequency, type, and quality of peer interactions the most. The focal students and peers experienced challenges communicating that negatively impacted the attempts of the peers to initiate and maintain social conversations with the focal students. Three of the focal groups were able to collaborate well together, which involved engaging in task related interactions, with either adults or peers providing supports for the focal student to participate. Adults tended to interact less frequently when either peers provided supports, they perceived that supports were not needed, or

the focal student refused their offer of support. These findings indicate the important role supports can play in the frequency of interactions students with severe disabilities will have with adults and peers. If adults recognize that one of the goals of including students with severe disabilities in inclusive service-learning is to increase peer interactions and their engagement in collaborative tasks, adults can consider how to best facilitate peers to provide supports and to work in a manner that is collaborative.

Contextual Factors

The specific contextual factors examined to determine their relationship to peer interactions included the composition of the focal groups, the type of task, adult physical proximity, and adult prompting. All of the contextual factors were found to have a significant relationship with peer interactions.

The relationship between the composition of the focal groups and peer interactions was complex. The findings from the regression analysis across the focal groups indicate that belonging to a *mixed willingness to help with a shared common interest group* was positively associated with increased peer interactions, and the opposite was true of a *willingness to help with a mixed common interest group*. Bea and David each belonged to a *mixed willingness to help with a shared common interest group*, but none of the students initiated interactions involving their common interests, and the adults did not facilitate social interactions involving these common interests. Bea and David's focal groups functioned well together, which may explain the findings from the regression analysis that these two groups had increased peer interactions. Additionally, in both of these focal groups, the peer that responded to the student interests survey that they disagreed with the statement about being willing to help classmates, reported that the other peer in the group was the first to help the focal student, and this

encouraged them to also provide assistance. In the other type of focal group, *willingness to help with a mixed common interest group*, for the focal groups of Lamar and Matt, the provision of adult provided supports, or limited peer supports and poor collaboration may also explain the finding that this type of group was associated with decreased peer interactions.

Interestingly, the only frequent social interactions involving the shared common interests used to form the focal groups occurred within Lamar's focal group, which was a *willingness to help with a mixed common interest* group. Lamar and Deon engaged in social interactions throughout the service-learning project involving their common interests of sports and music. Although Lamar and Sandra also engaged in social interactions, these did not include the shared interests from the survey. Lamar was largely responsible for these social interactions, as he would often initiate the conversations with Deon. The combination of Lamar's communication skills and Deon becoming aware that he and Lamar shared common interests appeared to contribute to the connection that was made between the two students and their frequent peer interactions.

Consistent with suggestions in the literature to select peers for peer support arrangements using shared common interests as a criterion (Carter et al., 2013; Carter et al., 2011; Carter et al., 2007; Rossetti, 2011), by placing Lamar and Deon in the same group with the shared common interests of sports and music, the students readily engaged with each other socially throughout the service-learning project. Unfortunately, the other groups did not discover through interactions that they had common interests, and adults did not facilitate making students aware of their common interests; therefore these topics never served to maintain social interactions within each focal group. Inclusive service-learning may provide a context for social interactions

to occur that will enable students to make a connection through common interests, but only if the common interests become known within the group.

Across all four focal groups, students engaged in collaborative tasks throughout the inclusive service-learning project. Some of these tasks included gathering materials for the group, creating beads and centerpieces, painting centerpieces, assembling the Ben's Bells, and cleaning up. Bea's group worked collaboratively and independently for approximately equal amounts of time. David's group worked collaboratively more frequently than independently, while Lamar's and Matt's group worked collaboratively less often than they each worked independently.

Among the three task types examined (collaborative tasks, independent tasks, and no tasks), collaborative tasks were most strongly associated with increased peer interactions. Task related interactions tended to increase when students with severe disabilities and peers engaged in collaborative tasks. These findings are consistent with investigations of greater peer interactions during small group instruction or collaborative work compared to whole group or independent work (Carter et al., 2011; Carter et al., 2008; Cushing, Kennedy, Shukla, & Meyer, 1997; Katz, Mirenda, & Auerbach, 2002; Rynders, Johnson, Johnson, & Schmidt, 1980). Collaborative tasks provided a context for the focal students to interact regarding the tasks they were performing and to discuss the project. Diverging from the findings of Cushing et al. (1997), that cooperative group work increased social interactions, the findings from this investigation revealed that task related interactions increased during collaborative work. Although collaborative tasks did not appear to support increased social interactions, task related peer interactions are important within the context of addressing other goals within inclusive service-learning. Task related interactions enabled the students with and without disabilities to

collaborate effectively to meet the common goal of creating the Ben's Bells, thereby making a contribution to the community.

Across all four focal groups, students worked independently during various tasks, such as when they were painting their own beads. For Lamar's and Matt's groups, students worked independently more often than collaboratively. Bea's group and David's group worked independently and collaboratively for a similar amount of time across sessions.

The relationship between engagement in independent tasks and peer interactions had mixed findings across the focal groups. Engagement in independent tasks was most commonly associated with decreased interactions for students with severe disabilities. For Bea, who had more significant communication challenges, engagement in independent tasks was associated with decreased social interactions, but increased task related interactions. David experienced decreased social interactions during independent tasks. No significant relationships were found for peer interactions when Matt was engaged in an independent task. These findings are consistent with previous research that indicates students with severe disabilities and peers being placed in mere physical proximity does not necessarily translate to increased peer interactions (Carter & Hughes, 2005; Hughes, 1999; Mu et al. 2000). Lamar's group was the exception, with engagement in independent tasks being associated with peers responding to Lamar with a greater frequency. This may have occurred because Lamar often did not need additional supports, and Lamar would often initiate social conversations with peers when members of the group were working individually.

As there were several adults in each of the classrooms during the inclusive service-learning project, it is not surprising that adults were in physical proximity to the focal students for a relatively high percentage of the time. Bea had the highest frequency of adults being near

her with 64.84% of intervals. Matt followed Bea in terms of frequency of adult physical proximity, with 59.10% of intervals, and then Lamar, with 46.11% of intervals. An adult was in physical proximity to David for the least amount of time during the project compared to the other focal students, with adult physical proximity occurring during 28.30% of the intervals. It is not surprising that Bea had the highest percentage of time with adult physical proximity, as Bea had the greatest support needs, and the peers were hesitant to provide supports until they received prompting and modeling from adults. Additionally, during the session assembling the Ben's Bells, the preservice teachers in Bea's class reconfigured the classroom to have several smaller groups at a larger table. A special education teacher who was providing support to another student with severe disabilities sat at the table in physical proximity to Bea for the entire session, which caused an increase in the percentage of intervals with adult proximity recorded. Matt participated in the project in the classroom with the fewest number of students; therefore, the preservice teachers had more time available to spend with each group of students, including Matt's group. For Lamar's group, the preservice teachers perceived the need to provide Lamar with support if the peers did not automatically do so. The preservice teachers rarely prompted peers to provide supports, nor did they provide enough time for peers to offer Lamar supports before they would approach him and provide the support themselves. The adults in David's classroom perceived their focal group as working together well, and that David did not require many supports; therefore the adults spent less time in physical proximity to him.

Diverging from previous research regarding the relationship between adult physical proximity and peer interactions, adult physical proximity to the focal students was positively associated with overall increased peer interactions (Carter et al., 2011; Carter et al., 2008). Although the findings indicate adult physical proximity was related to increased peer

interactions, specific instances when adult physical proximity hindered interactions were also observed during the service-learning project. As Causton-Theoharis (2009) described, adults in proximity to students with disabilities can become a physical barrier to peer interactions. During a session assembling the Ben's Bells, one preservice teacher physically blocked interactions between Lamar and Sandra for most of the class period. Immediately after the preservice teacher left the area, Lamar and Sandra began to interact. Similar to the findings of Carter et al. (2008), task related interactions were greater when adults were in physical proximity to the focal students with severe disabilities. Within service-learning pedagogy, adults assume roles of facilitators rather than only as instructors. Part of this facilitation in this investigation included prompting peers and students with severe disabilities to work collaboratively and for the students to reflect on the mission of the service-learning project, which may explain why adult physical proximity was related to increased task related interactions.

The contextual factor of adults prompting students to interact was found to have a positive relationship to peer interaction across the four focal groups. The frequency of adults prompting the members of a focal group to interact was similar across focal groups, with a low of 6.03% of intervals in Lamar's group and a high of 7.52% in David's group. Adult prompting included modeling for peers how they could provide students with severe disabilities supports, and adults fostering social interactions by initiating conversations within the focal groups. In this investigation, adults were observed to more frequently prompt students to collaborate and encourage task related interactions than social interactions. For Bea, peers readily accepted the adults' suggestions as to how to work together. Peers also observed adults modeling supports, and then incorporated them into their interactions with Bea. In the focal groups for Lamar,

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David, and Matt, adults also prompted the students to work collaboratively, which also had a positive relationship to increased task related interactions.

The preservice teachers appeared to feel more comfortable in the role of facilitating collaboration, which is more closely aligned with a traditional teacher role of directing students than a role in fostering social interactions. The preservice teachers were provided a list of the common interests that were shared by each member of the groups, but as novice preservice teachers, they primarily focused on presenting their lessons. The preservice teachers admitted that they forgot that this was a resource available to help foster social interactions. To be fair, the preservice teachers had little time to build rapport with the students, as the project occurred over six class sessions, which potentially prevented them from more readily prompting social interactions.

The findings across focal groups from this investigation are similar to previous research that found that adults infrequently prompt students with severe disabilities and peers to interact socially (Carter et al., 2014; Carter et al., 2005; Hughes et al., 2013; Hughes et al., 2012). Other research focused on the perceptions of teachers have found that they view the development of social skills and opportunities for social interactions as a priority for students with severe disabilities (Agran, Alper, & Wehmeyer, 2002), yet teachers tend to not implement explicit strategies to foster peer interactions (Carter et al., 2005; Gelzheiser, McLane, Meyers, & Pruzek, 1998). The findings from this investigation also suggest that unless the student with severe disabilities or the peers feel comfortable initiating conversations about their interests to discover where they have "common ground", social interactions are less likely to occur without adult support. Adults can help foster peer interactions by highlighting similar interests between peers and students with severe disabilities, and helping students to make connections (Causton-

Theoharis & Malmgren, 2005; Giangreco, Edelman, Luiselli, & MacFarland, 1997; Rossetti, 2012; Rossetti & Goessling, 2007). This is particularly true for students who have significant challenges in communication.

Roles

Previous investigations of inclusive service-learning or peer interactions have not focused on the informal roles students with severe disabilities assume within a group of peers. These roles may influence the perceptions of adults and peers of the competence of students with severe disabilities and their contribution to the group. The roles students with disabilities assume during inclusive service-learning is, in part, determined by their interactions with peers and adults. The framework developed by Benne and Sheats (1948) to describe the informal roles assumed by adults during group work was used in this investigation with the analysis allowing for an additional role category of neutral roles to emerge from the data.

Across the focal groups, students with severe disabilities assumed a variety of group building roles, in which the focal students engaged in behaviors that maintained or promoted the interpersonal functioning of the group. All of the focal students were observed to engage in the role of a *conversation starter/maintainer* by initiating conversations or responding to peers. Although adults and peers described Lamar and David as assuming this role, adults and peers did not identify either Bea or Matt as assuming the role of a *conversation starter/maintainer*. Matt infrequently initiated and responded to peers, and one peer described that their group "really didn't talk." Conversely, Bea often attempted to initiate conversations and would respond nonverbally, but her peers did not recognize this as "conversation", and the adults did not help the peers to understand how she was using facial expressions and gestures to communicate. Carter et al. (2014) suggest adults can help facilitate peer interactions by interpreting for peers

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the communicative intent of students with severe disabilities who express themselves nonverbally.

Two group building roles, *new disability-related experience provider* and *positive energizer*, emerged as important in regards to how peers perceived the students' contributions. Within the role of a *new disability-related experience provider,* two focal students provided a new learning experience for peers who may have not previously worked with someone with severe disabilities. The importance of this role is its connection to the quality standards for service-learning. One of the quality standards for service-learning is focused on promoting an "understanding of diversity and mutual respect among all participants" (Billig, 2007). Inclusive service-learning has been advocated as a means to promote greater acceptance of individuals with disabilities and to increase perceptions of competence (Billig, 2007; Carter et al., 2013; Muwana & Gaffney, 2010). Students with the most significant disabilities may automatically assume the *new disability-related experience provider* role by offering peers an opportunity to learn how to interact and collaborate with them as a student with significant communication challenges. Teachers can highlight for peers the variety of roles that students with severe disabilities assume to reinforce an understanding of the contributions they make during inclusive service-learning.

Across the focal groups, the students were most often remembered for their group building role as a *positive energizer.* The focal students assumed this role by bringing a positive, happy energy to the group, and this was observed when focal students smiled at peers, participated in playful teasing, and laughed at peers' humorous comments. Carter et al. (2005) found that nonverbal prosocial behaviors, such as eye contact, smiling, and laughing were positively associated with frequency and quality of reciprocal interactions of students with severe

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disabilities and peers. Adults and peers alike recognized that the focal students made an

important contribution to each of their groups through the role of *positive energizer* by reducing

tension and increasing group cohesiveness. By assuming this role, peers may be more likely to

view students with severe disabilities as someone with whom they could develop a friendship.

One hallmark of high quality friendships in adolescence is that of cooperative, prosocial

behaviors (Berndt, 2002; Cillessen, Jiang, West, & Laszkowski, 2005), which would match those

of a student with severe disabilities assuming the role of a *positive energizer*.

Consistent with advocates in the literature who promote inclusive service-learning as a

means to increase the perception of competence for students with severe disabilities (Carter et

al., 2012; Gent & Gurecka, 1998; Kluth, 2000), the focal students assumed a variety of task

completion roles beyond *assistance receiver* and *directions receiver* that adults and peers

recalled when stating how these students contributed to the group. Lamar was even described as

assuming task completion roles that indicate leadership, including those of *decision contributor*

and *director*. Even though all of the peers recognized that the students with severe disabilities did

not perform some tasks at the same quality level, the peers did not view the focal students'

contribution as being less than their own. On the contrary, peers across the focal groups referred

to everyone doing their "fair share" or contributing to tasks, and that tasks were completed

because they were willing to help each other. This indicates that the peers valued the *task*

performer and *skill deficit performer* roles the focal students assumed, and that ensuring the

quality of work produced was a group issue.

Rynders, Johnson, Johnson, & Schmidt (1980) found that cooperative goal structuring

improved peers' perceptions of students with severe disabilities over the same task that was

structured to foster competition or individual improvement, even when the students with severe

disabilities did not perform as well on tasks as the peers. The cooperative goal structure of inclusive service-learning may be a factor that influences peers' positive perceptions of students with severe disabilities. Moreover, the ultimate goal of student contributions within inclusive service-learning is to meet a need outside of their group, rather than to complete a task in which they will be evaluated solely for a group product. Although inclusive service-learning should also provide mutual benefit to the students in the form of achieving learning objectives tied to the school curriculum, students with and without disabilities may be more motivated to collaborate because their focus is to accomplish a goal for the community instead of for the prize of earning a good grade. Adults can support students with severe disabilities in assuming a wide variety of task completion roles by ensuring peers understand how each student can communicate choices and by modeling for peers how to provide needed supports for completing tasks (Carter et al., 2014; Causton-Theoharis & Malmgren, 2005).

The focal students all assumed individualistic roles at various points in the project, but these were the roles assumed the least of the four role categories. Individualistic roles are of concern because they can have the potential to decrease peer interactions due to the negative perceptions peers may develop regarding the student with severe disabilities. In this investigation, the adults and peers did not describe the few individualistic roles assumed by focal students, with the exception of the *attention seeking* role assumed by Lamar and most of the individualistic roles assumed by Matt. Unsurprisingly, the adults and peers did not recall the individualistic roles that were rarely assumed or were fairly benign in terms of detracting from group building or task completion, including the few instances in which Bea and David assumed individualistic roles, such as *ignorer*. The adults described some of the individualistic roles that

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were assumed by Matt across sessions or were more noticeable in terms of their negative impact, such as *materials destroyer/hoarder*, *social skills offender*, and *task loafer*.

The roles peers assumed were not analyzed as part of this investigation; therefore, it is difficult to know whether the types of individualistic roles students with severe disabilities assumed were similar in type and frequency to peers. Undoubtedly, peers also engaged at times in *ignorer* roles, when they stopped paying attention to adults providing directions, but other individualistic roles were clearly only assumed by focal students and set them apart from their peers because they did not conform to behavioral standards for the group. For example, when Matt assumed a *materials destroyer/hoarder* role, his peers looked at him with concern, but did not seem comfortable directing him to stop his negative behaviors. Students with severe disabilities should be held to the same standard of behavior as their peers during inclusive service-learning. Adults can express clear expectations for behavior of all group members. Use of positive behavioral supports (Horner, 2000) may also limit the individualistic roles that students with severe disabilities may assume that would potentially cause peers to have negative perceptions of students with severe disabilities and decrease their interactions.

This investigation found that students with severe disabilities assumed roles during inclusive service-learning that did not fit within the three role categories described in the literature (group building, task completion, and individualistic). A new category of neutral roles emerged from the data for these types of roles. Within neutral roles, students with severe disabilities assumed a passive role; they neither engaged in behaviors that positively supported task completion or group building, nor were they intentionally negative. The concept of neutral roles is strongly related to a lack of opportunity to engage in the other role types. These roles were assumed infrequently across focal students, and adults and peers did not identify them. Bea

assumed neutral roles most frequently, with all of the focal students assuming a neutral role as a *task observer* occasionally.

One type of neutral role, *dependent non-participant*, appears to be specific to students with severe disabilities due to the lack of opportunity to perform self-determined behaviors. This resulted in missed opportunities for students with severe disabilities to connect with peers through group building roles or contribute to the group through task completion roles. Students with severe disabilities need an effective means to communicate in both social and task related interactions, so that they are not forced to assume a *dependent non-participant* role. Bea, David, and Matt assumed *dependent non-participant* roles most frequently when adults or peers chose to talk about the students in their presence or respond for the students instead of encouraging the students to respond for themselves. Bea would also assume a *dependent non-participant* role when she missed opportunities to participate or interact with peers, such as when adults and peers did not ensure she was positioned properly to participate, and when she was brought to class late.

Inclusive service-learning has been advocated as a means for students with disabilities to be perceived as valued contributing members of a class, school, and community when they collaborate with peers as the providers of service to the community (Gent & Gurecka, 2001). This investigation found that all of the focal students assumed a variety of group building roles and task completion roles that demonstrated they contributed to their group and toward accomplishing the service mission of the project. A variety of factors influenced the types of roles the focal students were able to assume, including the students' social and communication skills, the collaborative or independent nature of tasks, and the level of adult facilitation to ensure student support needs were met. When students did not have the social or communication

skills necessary for a particular situation, then they may assume individualistic roles. Additionally, when adults do not recognize when a student's opportunities to engage in self-determined behavior are being limited by their actions, students with severe disabilities may assume neutral roles.

Implications for Inclusive Service-Learning Practice

The findings from this investigation provide implications for inclusive service-learning practices with regards to promoting peer interactions, including adjusting contextual factors related to grouping students, providing students with severe disabilities with needed communication supports, facilitating social and task related interactions through adult prompting, and by selecting projects and arranging tasks that will require greater student collaboration. Additionally, suggestions for inclusive service-learning practice can be made in regards to ensuring students with severe disabilities are able to assume a wide variety of group building and task completion roles.

Students can be purposefully grouped for inclusive service-learning, with a student with severe disabilities matched with two peers who all share common interests, in an effort to promote peer interactions (Carter et al. 2005). It may also be beneficial if one of the peers has expressed a willingness to help other classmates because this peer may encourage the engagement of the second peer, if he or she is initially reluctant to interact or provide supports to a student with severe disabilities.

Although inclusive service-learning provides an instructional context for students with severe disabilities to engage in social interactions, students with severe disabilities and their peers may still need additional supports to increase interactions. One focal student did not have access to a communication system and this impeded her ability to interact with peers and adults.

Students need to bring their augmentative and alternative communication (AAC) to class, and if they do not have a communication system, they need to be evaluated for one (Calculator, 2009).

In this investigation, the preservice teachers were provided with information about the communication skills of the focal students and other non-focal peers with severe disabilities prior to the project. This helped some of the preservice teachers plan how they would interact with students to promote their involvement in the project and to foster interactions with peers. Adults can also share their knowledge of effective ways to communicate with a student with severe disabilities and help interpret the communicative intent of their interactions with peers (Carter et al., 2014).

The social topics discussed by students with severe disabilities and peers in this investigation offer areas to provide instruction to students with severe disabilities to initiate and maintain conversations with peers. Social topics of conversation may also be considered when developing a communication system or supports for students who require AAC. For a student who communicates nonverbally, these might include use of additional supports, such as the student sharing photographs of their activities from the weekend as conversation starters (Hughes et al., 2002; Hughes et al., 2004; Hunt et al., 1991), or a short video clip of their favorite activity, television show, or movie on a smart phone to initiate a social conversation. Teachers may consider how students with severe disabilities could continue to develop social connections formed during inclusive service-learning during other parts of the school day, such as lunch or during breaks, when social interactions are not limited by expectations for academic engagement. This might include use of peer network strategies to engage students with their peers across the school day in a variety of settings (Carter et al., 2013).

Other adult facilitation strategies can be implemented within inclusive service-learning that may increase peer interactions. Adults prompting students to interact was found in this investigation to be positively associated with increased peer interactions, especially for students to work collaboratively. Teachers can consider how to best facilitate social interactions through prompting by learning about students' interests and then highlighting for the students their shared interests. Although adult physical proximity was not negatively associated with overall peer interactions, it was also not associated with increasing social interactions of students with severe disabilities. Teachers can attempt to naturally draw students into social conversations, and then leave the group, so that the students can continue to socially interact without interference from adults.

Teachers may consider the implications of these findings regarding the relationship between the type of task and peer interactions when selecting an inclusive service-learning project. Different service-learning projects may afford greater opportunities for students to engage in collaborative tasks, and these types of tasks may provide students with severe disabilities more frequent opportunities to engage in interactions with peers (Chun, 2009). Moreover, teachers can consider how to structure tasks that will create interdependence. Within this service-learning project, the manner in which students were directed to gather materials and the opportunities for groups to make decisions partially determined whether a task was performed collaboratively or independently within the focal group. Teachers can promote interdependence by arranging for small groups of students that include students with severe disabilities to work on tasks that require collaboration and by directing students to make decisions and perform the tasks as a group. Teachers can also only provide enough materials for each group of students to create a product as a group rather than individually. Within

independent tasks, peers may be more likely to perceive providing supports to students with severe disabilities as an obligation to provide assistance that detracts from accomplishing their own work. However, within collaborative tasks, peers may be more likely to view providing supports to students with severe disabilities as just a means to accomplishing a group goal.

Inclusive service-learning has been promoted as a means for students with severe disabilities to develop a sense of belonging in their schools (Carter et al., 2013; Swedeen, Carter, & Molfenter, 2010). Membership for students within inclusive classrooms can be achieved when students with severe disabilities are able to assume valued roles and develop reciprocal relationships with peers (Jorgensen, McSheehan, & Sonnenmeier, 2010; Ohtake, 2003). Teachers can assist students with severe disabilities in achieving a sense of belonging and membership by ensuring students with severe disabilities have the needed supports to make contributions to task completion and the communication supports needed to assume group building roles.

Teachers can also help ensure peers have positive perceptions of students with severe disabilities by preventing students with severe disabilities from assuming neutral roles and individualistic roles. Students with severe disabilities will be able to assume the positive roles of group building and task completion if they are provided the opportunities to do so. This includes ensuring students with severe disabilities arrive on time to class and the students are in the optimal position to engage with peers and receive instruction. For students with mobility issues that rely on others to position their wheelchair, adults and peers can ensure that students with severe disabilities are positioned to be able to see presenters, that they are turned to face peers during interactions, and that they have access to materials the group is using for a task. Additionally, the adults can model respectful interactions by speaking directly to students with severe disabilities and allowing them the opportunity to respond (Carter et al., 2013; Kasa &

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Causton-Theoharis, n.d.). Positive behavioral supports may also help prevent students with severe disabilities from assuming individualistic roles that may be negatively perceived by peers.

Implications for Future Research

This study provides a greater understanding of how students with severe disabilities interact with peers and adults, how specific contextual factors relate to peer interactions, and what roles these students assume within the context of an inclusive service-learning project. The interactions peers engaged in not involving the focal students with severe disabilities during the inclusive service-learning project were not examined within this investigation, nor were the roles that these peers assumed. A study examining the frequency and type of these interactions and the roles peers assumed would provide normative data to compare to the frequency of peer interactions and roles assumed to that of students with severe disabilities. This would provide a criterion of peer interaction frequency and role types that may guide further investigations of inclusive service-learning as a support focused intervention seeking to create greater parity between the peer interactions and roles of students with severe disabilities and their peers.

Many other gaps in the literature still exist with a need to explore how inclusive service-learning can potentially serve as a support focused intervention to increase peer interactions of students with severe disabilities. Future research can examine, through separate investigations, the differential effects of each of the contextual factors that had a significant relationship to peer interactions when addressed within the context of inclusive service-learning compared to small group collaborative non-service-learning projects on the outcomes of peer interactions and roles assumed. One of these investigations might include an examination of how inclusive service-learning with purposeful grouping by shared common interests of peers and students with severe disabilities compares to the same type of purposeful grouping during a non-service-learning

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collaborative project. Another investigation could examine the impact of inclusive service-learning that has a high level of cooperative tasks compared to inclusive service-learning that has more independent tasks. Within a third investigation, the impact of adult physical proximity can be examined between inclusive service-learning and collaborative non-service-learning projects and also by level of support needs for students with severe disabilities. Lastly, a study could compare inclusive service-learning and collaborative non-service-learning that both have the same level of adult facilitation of peer interactions, including adult prompting that is implemented with fidelity measures. These investigations could provide an understanding of whether the service in service-learning matters for increasing peer interactions and the attainment of valued roles for students with severe disabilities. The component analysis aspect of these investigations would also help to determine the support focused structures that need to be included within inclusive service-learning to make a meaningful, positive impact on increasing peer interactions.

Conclusion

From this investigation, it is evident that inclusive service-learning has the potential to serve as a support based intervention for increasing peer interactions for students with severe disabilities and can afford these students with opportunities to assume roles within a peer group that are positively perceived for their abilities to make contributions to their group and to the overall service mission of a project. However, more needs to be learned about how to best structure inclusive service-learning to maximize its potential impact on increasing peer interactions and to provide opportunities for students with severe disabilities to assume valued roles.

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Figures

Figure 1. Photograph of 10 Ben's Bells wind chimes. Each Ben's Bells is created using three, glazed ceramic beads, a glazed ceramic centerpiece (i.e. flower, heart, or butterfly), a metal bell, and cotton cording. By the time one Ben's Bells is made, at least 10 individuals will have contributed to creating it. Each Ben's Bell is distributed with an attached tag that briefly describes the project and provides a website for those finding a bell to share their story.
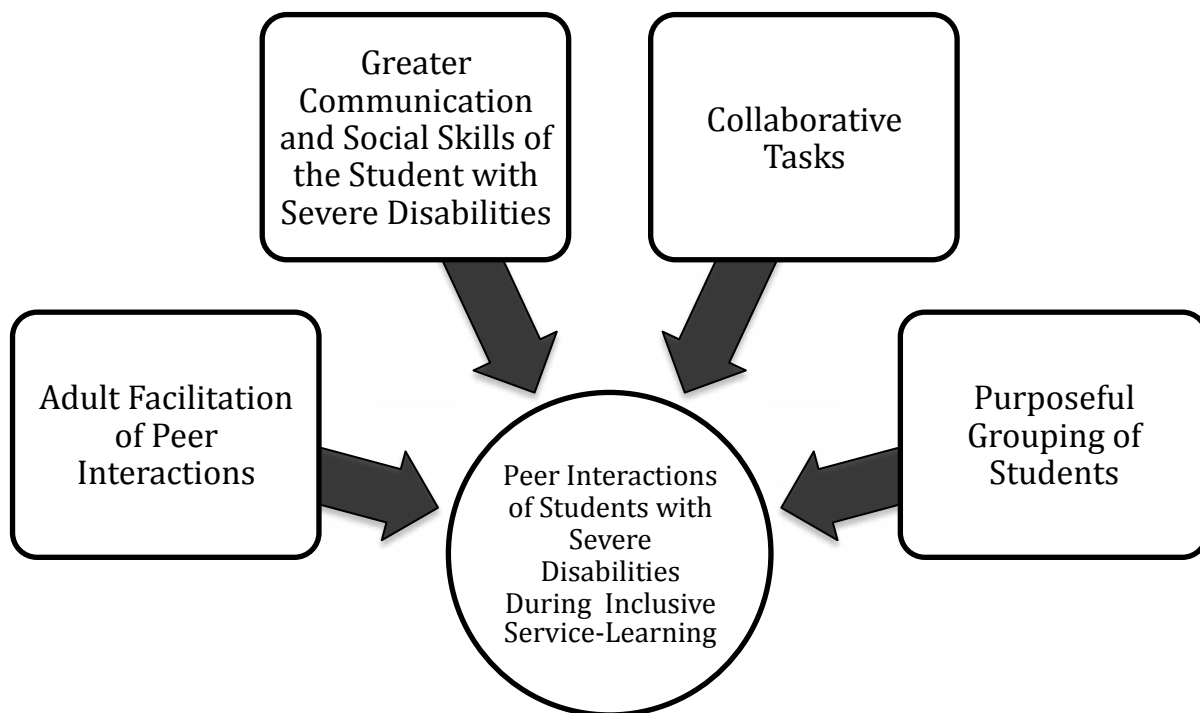
Figure 2. The factors that were positively associated with increased peer interactions for students with severe disabilities during inclusive service-learning.
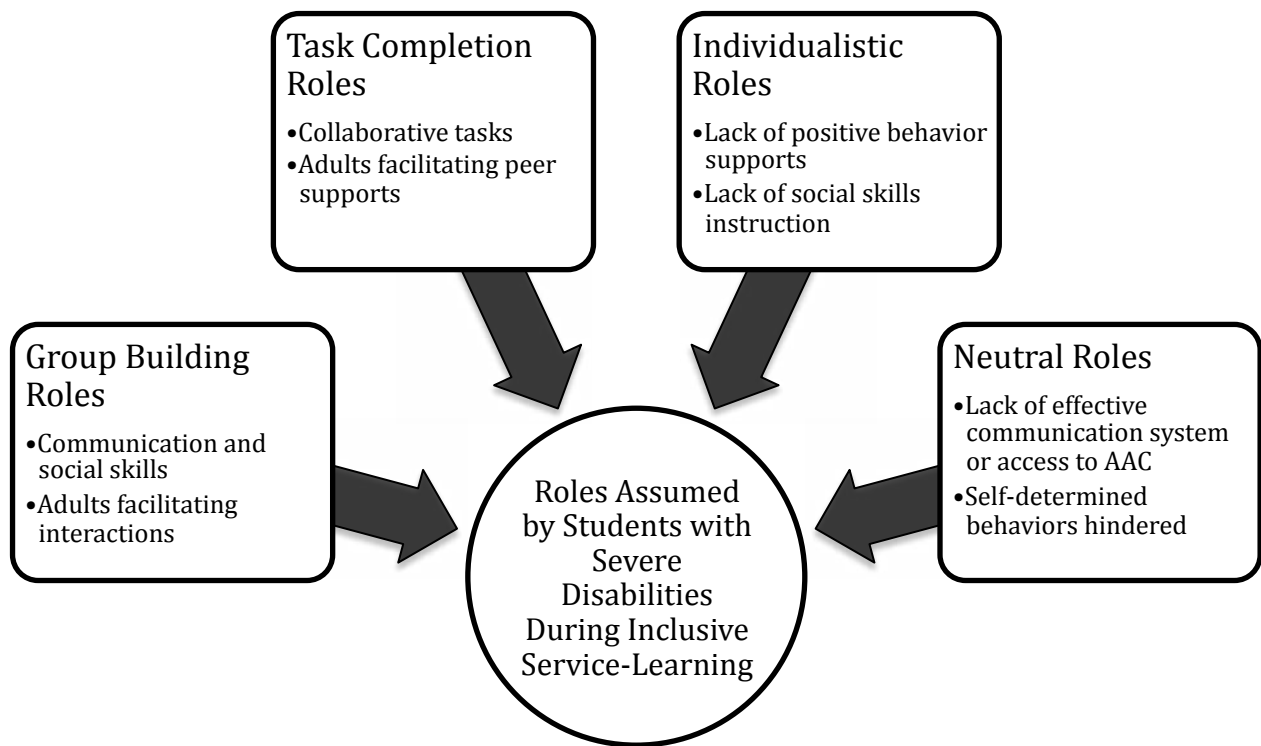
Figure 3. The four categories of roles assumed by students with severe disabilities during inclusive service-learning and the factors that influenced students assuming roles within each category.

Tables

Table 1

Student Demographics by High School

School[a]	Student Population (N)	Students Receiving Special Education Services (%)	Students from Families with Low Income Status (%)
Hill Valley	1,459	10.5	47.4
Main North	1,307	16.8	52.9
San Dimas	744	12.5	59.9

(Illinois State Board of Education, 2012)

[a]School names are pseudonyms.

Table 2

Percentage of Students in Each School by Ethnicity

School[a]	European American	African American	Asian	Hispanic	Native American	Pacific Islander	Two or More Ethnicities
Hill Valley	48.4	33.9	8.2	6.0	0.2	0.1	3.2
Main North	43.8	36.0	7.7	8.7	0.5	0.1	3.1
San Dimas	56.3	27.4	1.5	7.7	0.1	0.0	7.0

(Illinois State Board of Education, 2012)

[a]School names are pseudonyms.

Table 3

Percentage of Students in Each School District and Cooperative Receiving Special Education Services by Disability Category

	Disability Category		
District[a]	Autism	Intellectual Disability	Multiple Disabilities
LUSD	1.286	1.286	0.191
San Dimas	0.524	2.097	0.393
Rural Cooperative	0.955	0.969	0.140

(Illinois State Board of Education, 2011)

[a]Names are pseudonyms.

Table 4

Percentage of Time Spent in General Education Settings by School District and Disability Category

	Longmeadow Unified School District[a] Time in General Education Settings				San Dimas High School (District)[b] Time in General Education Settings			
Disability Category	≥ 80%	40-79%	< 40%	Separate Facility	≥ 80%	40-79%	< 40%	Separate Facility
Autism	38.3	31.8	23.4	6.5	0.0	100.0	0.0	0.0
Intellectual Disability	8.3	51.2	32.2	8.3	12.5	31.3	43.8	12.5
Multiple Disabilities	NP	NP	NP	NP	NP	NP	NP	NP
All Disability Categories	62.4	22.8	7.8	7.0	41.1	31.8	10.9	16.3

Note. NP = Not provided in state reports. (Illinois State Board of Education, 2011).
[ab] Names are pseudonyms.

Table 5

Ben's Bells Weekly Project Activities and Student Learning Objectives

Week	Activities	Student Learning Objectives
Week 1	• Students learn the history of the Ben's Bells Project through a video and preservice teacher presentation. • The students engage in a get-to-know-you activity to join in their assigned groups. • The students make a goal for the number of Ben's Bells their class will create. • Following a preservice teacher demonstration, the students work with clay in their groups to create beads for the Ben's Bells. • The students reflect on how kindness impacts their everyday lives.	Art: Demonstrate working with wet clay to create various bead shapes that are of appropriate size. Kindness: Understand the purpose of the project, which is based on spreading intentional kindness.
Week 2	• The students learn through a preservice teacher presentation and facilitated discussion how gratitude, a characteristic of being kind, is associated with happiness. • The students create a thank you card to show someone gratitude. • The students keep a gratitude journal for the week. • Following a preservice teacher demonstration, the students work in their groups to create centerpieces for Ben's Bells. • The students reflect on how often they might show someone gratitude or kindness each day, and what that gratitude might mean to someone else.	Art: Demonstrate creating clay slabs to a specified thickness using a hand roller and level guides. Demonstrate using cutting tools to create uniform shapes. Demonstrate wedging the clay to prevent breakage when firing. Kindness: Understand how gratitude is related to kindness and how it can be positive for both the person expressing the gratitude and the person receiving it.
Week 3	• The students review their gratitude journals and discuss how keeping track of what they were grateful for made them feel. • The students receive a kindness coin to show them gratitude for their work on the project. The students can keep the coin or pass it on to someone else they see being kind. • The students discuss how people being unkind when using social media may be a problem. The students discuss why some people feel it is acceptable to write things online that they would not say to someone in person. The students brainstorm ideas for having social media be used in a positive manner. They also watch a short video about high school students who use social media to compliment their classmates and teachers. • The preservice teachers review the students' goal and their progress for making Ben's Bells. • Following a demonstration of the preservice teachers glazing beads, the students work in their groups to perform this task. • The students reflect on what steps they could take to use social media in a positive manner.	Art: Understand that beads that have been fired once are called bisque. Understand the properties of glaze. Demonstrate glazing beads using the correct number of coats and creativity in decoration. Kindness: Understand how people sometimes hide behind the anonymity of posting online to express themselves in ways that people would find unacceptable in person. Understand how social media can be a positive force to spread kindness if it is used that way intentionally.

Week 4	• Students volunteer to perform a role-play presenting a scene in which a shopper does not stop talking or texting while a cashier is trying to assist them. The students then discuss how this might make the cashier feel and if they have ever experienced this as either the cashier or as a shopper. The students discuss how technology can sometimes hinder intentional kindness in our everyday interactions. • The students perform a second role-play in which the shopper and cashier have an interaction based on intentional kindness. • The preservice teachers review the students' progress toward their goal and read a story from a person who found a bell last year. • Following a preservice teacher demonstration, the students work in their groups to glaze the centerpieces for Ben' Bells. • The students reflect on how they might demonstrate intentional kindness when using their cell phone or other technology.	Art: Demonstrate glazing each centerpiece with the correct number of glaze coats. Kindness: Understand how to use technology to ensure our interactions with others are based on intentional kindness. Learn to empathize with how others might feel about the ways in which we use technology.
Week 5	• The students engage in a preservice teacher led discussion regarding the importance of being kind to yourself. The students consider why this is difficult sometimes. They brainstorm strategies to be kinder to themselves and discuss how being kinder to oneself might help you be kinder to others. • Each group of students receives a map of an area within a few miles of their school. Each group discusses where they would like to distribute Ben's Bells within that area. The students discuss which places might be areas in particular need of kindness. • Following a demonstration by the preservice teachers, the students work in their groups to assemble the pieces created into finished Ben's Bells. • The students reflect and share their strategies for being kinder to themselves for specific situations, such as getting ready in the morning, receiving a poor grade on an assignment, or not being selected for a team.	Art: Demonstrate using measuring tools and selecting matching colors to create symmetry in the finished Ben's Bells wind chimes. Create pieces of artwork that will within stand the elements outdoors. Kindness: Understand the importance of being kind to oneself and how that can impact your ability be intentionally kind to others. Consider their own community's needs to select locations to distribute the Ben's Bells.
Week 6	• The preservice teachers read a story from someone who found a bell the previous year and discuss with the students how people in their town might feel when they find one of the Ben's Bells that was made. The preservice teachers also share how others have collaboratively created art that is shared with others. • The students leave campus by bus or by walking in their groups to distribute the Ben's Bells to their selected areas of their community. • The students participate in a celebration activity planned by the preservice teachers to show their appreciation to the collaborating teachers and to acknowledge the hard work of the students. • The students reflect about the meaning of the project for them through a final reflection activity planned by the preservice teachers.	Art: Understand the importance of collaborative public art. Create temporary installations of the Ben's Bells for community members to find. Kindness: Understand the power of their contribution to make their community a better place and that contribution can continue through their everyday actions of intentional kindness.

Table 6

Observation Coding Categories and Operational Definitions

Coding Category	Operational Definitions
Initiation	Any verbal or non-verbal behavior (e.g. speech, gesture, use of AAC, vocalization) with communicative intent that is directed toward another individual who is present when a response has not occurred to a previous initiation for at least 10-seconds.
Response	Any verbal or non-verbal behavior (e.g. speech, gesture, use of AAC, vocalization) with communicative intent that serves to acknowledge an initiation or another response that occurs within 10-seconds of the last initiation or response.
Interaction Type	
Social	The interaction during the interval is not related to the task.
Task	The interaction during the interval is related to the task.
Adult Physical Proximity	
No Prox	An adult (teacher, paraprofessional, other school staff, or a preservice teacher) is located more than 3 feet from the focal student
Prox	An adult (teacher, paraprofessional, other school staff, or a preservice teacher) is located within 3 feet of the focal student.
Adult Prompting	
No Prom	No verbal prompt to interact provided by adults (teacher, paraprofessional, other school staff, or a preservice teacher).
Prom	An adult (teacher, paraprofessional, other school staff, or a preservice teacher) verbally directing a peer or the focal student to interact.
Task	
Co	The student is performing or discussing the task collaboratively.
Indep	The student is performing the task without interaction with peers or support to/from peers.
No Task	The student is not performing a task.
Common Interest	
Com Y	The interaction involves the common interest or activity that was the basis of assigning students to the focal group from the student interests survey.
Com N =	The interaction does not involve the common interest or activity that was the basis of assigning students to the focal group from the student interests survey.
Reciprocity[a]	
Y	An interaction that includes one or more turns (initiation followed by a response) that involved the focal student.
N	An interaction that only involves an initiation. No response occurs during the current interval or the interval immediately following.

Note. Bolded items are the main categories on the Video Observation Form and/or the Live Observation Form.

[a]= Reciprocity variable was not coded directly through viewing of the video observations, but was calculated in Stata™.

Table 7

Data Collection Timeline

Dates	Activity
8/26/2013 – 9/9/2013	• Distribute waiver of consent letters for participating high school classes • Distribute student interest survey • Distribute and collect consent forms from parents of student's with severe disabilities • Review IEPs and complete Document Review Form • Purposefully select the focal student with severe disability for each class • Conduct informal observations of focal students with severe disabilities to note typical method of communication for initiations and responses • Analyze student survey results, consult with special education teacher to narrow preferred interests/activities for focal students, and then conduct a preference assessment with focal students with severe disabilities to determine preferred interests/activities • Select focal groups based on student interest survey results and preference assessments. • Distribute and collect parent consent and assent for peers for focal groups
9/16/2013 – 10/31/2013	• Conduct six observations of each focal group in each participating class
11/1/2013 – 11/15/2013	• Individually interview each peer.
11/1/2013 – 11/15/2013	• Conduct preservice teacher focus group interviews
11/1/2013 – 11/15/2013	• Conduct art teacher interviews
11/5/2013 – 12/30/2013	• Send interview recordings to transcriptionist. Write interview summaries.
11/25/2013 – 11/27/2013	• Provide interview summaries to peers and art teachers • Request responses from member checks of interview summaries
1/13/2014 – 1/17/2014	• Provide interview summaries to preservice teachers

Table 8

Key Features of Data Analysis by Research Question

Research Question	Key Data	Method of Analysis	Purpose for Mixing Methods (Greene, Caracelli, & Graham, 1989)	Approach to Integration
How do high school students with severe disabilities interact with peers and adults during inclusive service-learning?	Live and video recorded observations (Quantitative) Interviews and focus groups video recorded observations	Quantitative: Descriptive statistics Qualitative: Constant comparative analysis	Complementarity	During interpretation of findings from both methods
How do contextual factors related to: (a) the composition of focal groups (students grouped by common interests and willingness to help classmates versus students grouped together who do not have common interests and willingness to help classmates); (b) type of task (task is being completed collaboratively, independently, or no task is being performed); (c) adult physical proximity (within 3 feet of the focal student versus more than 3 feet from the focal student), and (d) adult prompting (verbally directing a peer or the focal student to interact or no verbal prompt to interact) promote or inhibit the peer interactions of students with severe disabilities during inclusive service-learning?	Video recorded observations (Quantitative and Qualitative) Interviews and focus groups	Quantitative: Descriptive statistics; multiple multivariate regression analysis Qualitative: Constant comparative analysis	Complementarity	During interpretation of findings from both methods
What roles do high school students with severe disabilities assume during inclusive service-learning?	Video recorded observations (Qualitative) Interviews and focus groups	Constant comparative analysis	Not Applicable	Not Applicable

Table 9

Anticipated Observable Behaviors to Code During Qualitative Analysis of the Video Recorded Observations by the Major Type of Role

Major Type of Role (Benne & Sheats, 1948; Mudrack & Farrell, 1995)	Observable Behaviors to Code
Task Completion	• prompts the group to action • clarifies directions • proposes or delegates tasks • offers facts or opinions related to the task • expands on suggestions • evaluates ideas • asks for facts or opinions related to the task • performs routine tasks, such as distributing materials or recording information
Group Building	• offers to compromise when there is a disagreement • praises or agrees with others' ideas • makes others feel welcome through friendly gestures (smiling, open body posture toward group, greetings, or other social amenities) • encourages others to participate • offers assistance • uses humor to reduce tension in the group
Individualistic	• criticizes the ideas, actions, or expressed feelings of others • takes credit for others' work • teases others regarding their physical appearance, dress, or interests • engages in behavior that distracts others from accomplishing tasks • inappropriately uses materials or equipment • refuses to complete tasks or assist others

Table 10

Definition and Observed Behaviors of Roles Assumed by Students with Severe Disabilities by Role Category and Checklist of Roles Assumed by Focal Student

Role Categories and Roles	Role Definition	1[a]	2[b]	3[c]	4[d]
Group Building Roles					
Collaborative purpose provider	The focal student's need for support provides the group a reason to work collaboratively.		x		x
Conversation starter/maintainer	The focal student initiates or maintains conversations by asking questions, making on-topic comments, responding to questions, etc.	x	x	x	x
Discussion contributor	The focal student answers questions posed to the focal group during a task related reflection activity.	x			
Empathizer	The focal student demonstrates empathy for the feelings of a peer.	x			x
Greeter	The focal student greets or bids farewell to peers and/or adults.	x	x	x	
New disability-related experience provider	The focal student provides a new learning experience for peers who may have not previously worked with someone with severe disabilities.		x		
Outsider seeking a way in	The focal student verbally or non-verbally attempts to join a conversation, but is not acknowledged or included in the conversation.		x		
Positive energizer	The focal student brings a positive, happy energy to the group by smiling, laughing, or through friendly teasing.	x	x	x	x
Praise receiver	The focal student receives praise for his or her performance on a task.	x	x	x	x
Praise provider	The focal student praises a peer for his or her performance on a task.	x			
Social nicety maintainer	The focal student makes a statement to demonstrate politeness, such as saying excuse me, bless you, pardon me, thank you, or you're welcome.				x
Status equalizer	The focal student tells peers something about himself or herself, or adult shares information about the focal student that may elevate the focal student's social status.	x			
Task Completion Roles					
Exploring					
Materials examiner	The focal student looks at or handles project materials in preparation to complete a task.		x	x	x
Performing					

Artistic contributor	The focal student contributes artistic talent to a task.	x			
Assistance decliner	The focal student declines assistance and continues to perform task.			x	
Materials organizer	The focal student gathers or organizes materials for a task.			x	x
Skill deficit contributor	The focal student attempts to complete tasks but is unable, or the focal student performs the task at a quality level that is not equal to peers because of deficits in skills.	x	x	x	x
Task performer	The focal student performs a project task that contributes to the overall goal of the group.	x	x	x	x
Turn taker	The focal student offers or accepts an offer to take turns performing a task.	x		x	
Offering					
Decision contributor	The focal student makes a decision regarding an individual task, contributes to a group decision, or makes a decision for the group.	x	x	x	x
Director	The focal student directs a peer to perform a task or explains to a peer how to perform a task.	x			x
Materials sharer	The focal student readily shares tools or materials when adult or a peer makes a requests.		x		
Receiving					
Assistance receiver	The focal student receives assistance from an adult or peer to perform a task.	x	x	x	x
Direction receiver	The focal student receives or follows directions for a task.	x	x	x	x
Requesting					
Assistance requester	The focal student requests assistance from an adult or peer to complete a task.	x		x	x
Clarifier	The focal student asks questions to clarify a task.	x			
Evaluation requester	The focal student asks adults or peers to evaluate his or her work.	x			
Individualistic Roles					
Attention seeker	The focal student engages in a behavior related to a personal issue instead of working and brings this issue to the attention of peers repeatedly through comments or questions.	x		x	
Button pusher	The focal student makes comments to a peer who has expressed desire to be left alone or repeats phrases that bother other peers.				x
Ignorer	The focal student ignores greetings, questions, requests, or comments directed toward him or her by a peer or an adult.	x	x	x	x

Role	Description	a	b	c	d
Materials destroyer/hoarder	The focal student uses materials in an inappropriate manner that is not related to the task or refuses to share materials with peers or adults.				x
Social skills offender	The focal student engages in inappropriate behavior that bothers peers or adults, such as inappropriate language, voice volume, and physical contact.		x	x	x
Task loafer	The focal student does not help the group by ignoring or refusing requests to assist the group, socializing while peers are working, arriving late by his or her own choice, or by claiming to have completed tasks that were not finished.			x	x
Neutral Roles					
Dependent non-participant	The focal student is denied the opportunity to engage in a group building or task completion role because he or she is: (a) not provided the means or opportunity to communicate, (b) not positioned properly to be able to see instruction or engage in an activity, (c) brought late to class by an adult.		x	x	x
Non-productive socializer	The focal student stops contributing to task completion while socializing with peers from his or her group while the peers continue working.	x			
Task observer	The focal student observes task performed by peers or adults.	x	x	x	x
Unnecessary task performer	The focal student is performing a task that does not need to be performed and does not contribute to or have a negative impact on task completion.	x			x

Notes: X indicates that the student assumed this role during the inclusive service-learning project as described by adults, peers, and/or observed in the videos.
[a] = Lamar, [b] = Bea, [c] = David, and [d] = Matt.

Table 11

Lamar, Case 1: Summary of Peer and Adult Interactions and the Relationship of Contextual Factors to Peer Interactions

Peer Interaction and Contextual Factors	Qualitative Findings	Quantitative Findings	Congruence/Incongruence or Expansion of Findings
Peer and Adult Interactions			
Frequency and ease of interacting	(a) Lamar was talkative and initiated conversations, and (b) easily connected with one peer, but the whole group did not connect	Lamar had a higher percentage of intervals initiating and responding than either peer. Frequency of Sandra and Deon responding to Lamar was similar, 20.00% and 19.60% of intervals respectively. High relative percentage of reciprocal interactions involving Lamar (68.33%).	Partially congruent: High relative frequency of Lamar's initiations and responding compared to his peers indicates he was talkative, and he did initiate conversations. Descriptive statistics does allow for interpretation of whether whole group interacted.

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Type of interaction and common interest interactions	Social and task related interactions. Adults described Deon and Lamar as having more social interactions than task related interactions. Social interactions typically involved Lamar and Deon discussing sports, music, or current events at school. Lamar and Sandra discussed his job, playing the drums, and his church. Task related interactions focused on discussing procedures for tasks, offering opinions, praising/receiving praise, requesting/receiving assistance, and reflecting on the mission of the project. Lamar and Deon discussed both of their common interest from survey. Lamar and Sandra did not discuss their common interest.	Percentage of social interactions was greater than task related interactions for each session except for the fifth session, which the task related interactions were greater than social interactions. Across the sessions, the percentage of social interactions was 32.94% of intervals. The percentage of task related interactions was 39.76% of intervals. Common interests were discussed during 8.25% of intervals.	Incongruent: More intervals of task related interactions than social interactions. Congruent: Adult and peer perceptions of common interests discussed matches the quantitative data indicating that interactions involved the common interests.
Group functioning	(a) Respectful; (b) collaborative; (c) variable perceptions of effectiveness working together ("worked fine", "a lot of teamwork", and "worked really well.").		Expansion.
Supports	Adults provided supports to Lamar, with peers occasionally providing supports.		Expansion.

Relationship of Contextual Variables and Peer Interactions			
Composition of the focal group	The adults described the shared common interest between Lamar and Deon as resulting in increased peer interactions, but it did not have a positive impact on the interactions between Lamar and Sandra or the whole group.	Belonging to a *willingness to help with a mixed common interest group* was negatively associated with all of the peer interaction variables.	Partially congruent: Perceptions of adults, that the shared common interest between Deon and Lamar increased peer interactions, does not match the quantitative findings that this type of group is associated with increased peer interactions, but the findings do match the interactions of the whole group.
Task type	One preservice teacher described the students as continuing to have interactions during independent tasks. Lamar and his peers were described as having task related interactions during collaborative tasks, such as discussing gathering materials. One peer described task related conversations that occurred during independent tasks, such as clarifying the task and providing assistance to Lamar.	Deon and Sandra's engagement in independent tasks and collaborative tasks was associated with an increased percentage of intervals responding to Lamar. Collaborative tasks were associated with an increased percentage of intervals with task related interactions and decreased percentage of intervals with social interactions for Lamar and Sandra. The reverse was true for Deon.	Congruent: Perception of the preservice teacher that independent tasks are associated with increased peer interactions matches quantitative findings for peers responding to Lamar. Partially congruent: Perception of task related interactions during collaborative tasks matches quantitative findings for Lamar and Sandra.

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Adult physical proximity to Lamar	Preservice teacher and one peer described adult physical proximity as resulting in decreased social interactions and increased task related interactions.	Adult physical proximity to Lamar was found to be associated with an increased percentage of intervals with task related interactions. Adult physical proximity was also found to be associated with an increased percentage of intervals with Lamar responding, Sandra responding to Lamar, and reciprocal interactions involving Lamar.	Congruent: Perception that adult physical proximity resulted in increased task related interactions matches the quantitative findings.
Adult prompting	Preservice teachers described adult physical prompting as resulting in increased peer interactions, especially task related interactions involving peers providing supports.	Adult prompting was found to be associated with increased percentage of intervals with initiations by Lamar, responding by Sandra to Lamar, reciprocal interactions, and task related interactions. Adult prompting was found to be associated with a decreased percentage of intervals with social interactions.	Congruent: Perception that peer interactions and task related interactions increased with adult prompting matches the quantitative findings.

Table 12

Lamar, Case 1: Summary of Roles Assumed

Focal Student Role Categories	Roles Described by Adults	Roles Described by Peer(s)	Roles Observed on Videos	Roles that were Incongruent (observed on videos, but not described by adults or peers)
Group building	Conversation starter/maintainer and positive energizer.	Conversation starter/maintainer, positive energizer, and status equalizer.	Conversation starter/maintainer, greeter, positive energizer, status equalizer, praise receiver, praise provider, discussion contributor, greeter, and empathizer.	Praise provider, praise receiver, discussion contributor, greeter, and empathizer.
Task Completion	Performing (task performer, skill deficit contributor); offering (decision contributor); and receiving (direction receiver, assistance receiver).	Performing (task performer, skill deficit contributor, artistic contributor); offering (director, decision contributor); receiving (direction receiver, assistance receiver); and requesting (clarifier).	Performing (task performer, skill deficit contributor, artistic contributor); offering (director, decision contributor); receiving (direction receiver, assistance receiver); and requesting (evaluation requester, clarifier, assistance requester).	Requesting (evaluation requester; assistance requester)
Individualistic	Attention seeker	Attention seeker.	Attention seeker and ignorer.	Ignorer.
Neutral	None.	Task observer.	Non-productive socializer, task observer, and unnecessary task performer.	Non-productive socializer and unnecessary task performer.

Table 13

Video Observation Peer Interaction Frequency Data Across Focal Groups

Peer Interaction Variables	Lamar's Focal Group[a]		Bea's Focal Group[b]		David's Focal Group[c]		Matt's Focal Group[d]	
	Freq.	Intervals (%)	Freq.	Intervals (%)	Freq.	Intervals (%)	Freq.	Intervals (%)
Initiations								
Focal Student	57	4.52%	74	6.64%	39	2.99%	16	1.95%
Peer 1	5	0.40%	22	1.97%	30	2.30%	3	0.37%
Peer 2	4	0.32%	11	0.99%	55	4.22%	9	1.10%
Other Peer	1	0.08%	0	0.00%	2	0.15%	2	0.24%
Preservice Teacher	31	2.46%	52	4.66%	30	2.30%	43	5.25%
Co-op Teacher	2	0.16%	1	0.09%	6	0.46%	0	0.00%
Paraprofessional	1	0.08%	10	0.90%	0	0.00%	2	0.24%
Other Adult	2	0.16%	5	0.45%	14	1.07%	13	1.59%
Responses								
Focal Student	861	68.33%	381	34.17%	471	36.12%	197	24.05%
Peer 1	252	20.00%	129	11.57%	277	21.24%	41	5.01%
Peer 2	247	19.60%	68	6.10%	292	22.39%	70	8.55%
Other Peer	47	3.73%	3	0.27%	27	2.07%	57	6.96%
Preservice Teacher	396	31.43%	223	20.00%	181	13.88%	144	17.58%
Co-op Teacher	22	1.75%	2	0.18%	13	1.00%	0	0.00%
Paraprofessional	4	0.32%	45	4.04%	1	0.08%	15	1.83%
Other Adult	21	1.67%	13	1.17%	65	4.98%	29	3.54%
Reciprocal Interactions	868	68.89%	428	38.39%	553	40.87%	227	27.72%
Type of Interaction								
Social	415	32.94%	145	13.00%	119	9.13%	97	11.84%
Task Related	501	39.76%	358	32.11%	473	36.27%	196	23.93%
Unknown	7	0.56%	46	4.13%	10	0.77%	7	0.85%
Common Interest								
Yes	104	8.25%	0	0.00%	1	0.08%	0	0.00%
No	818	64.92%	548	49.15%	581	44.56%	296	36.14%

Notes: Freq. = Frequency of intervals.
[a]n=1260 intervals, [b]n=1115 intervals, [c]n=1304 intervals, [d]n=819 intervals.

Table 14

Live Observation Peer Interaction and Contextual Factors Frequency Data Across Focal Groups for the Sixth Session in the Community

Peer Interaction Variables	Lamar's Focal Group[a]		Bea's Focal Group[b]		David's Focal Group[c]		Matt's Focal Group[d]	
	Freq.	Intervals (%)	Freq.	Intervals (%)	Freq.	Intervals (%)	Freq.	Intervals (%)
Initiations								
Focal Student	5	7.58%	3	10.34%	--	--	5	15.63%
Peer 1	0	0.00%	5	17.24%	--	--	1	3.13%
Peer 2	0	0.00%	0	0.00%	--	--	1	3.13%
Other Peer	1	1.52%	0	0.00%	--	--	0	0.00%
Preservice Teacher	6	9.09%	4	13.79%	--	--	1	3.13%
Co-op Teacher	0	0.00%	0	0.00%	--	--	6	18.75%
Paraprofessional	8	12.12%	0	0.00%	--	--	0	0.00%
Other Adult	2	3.03%	6	20.69%	--	--	1	3.13%
Responses								
Focal Student	61	92.42%	20	68.97%	--	--	29	90.63%
Peer 1	0	0.00%	9	31.03%	--	--	11	34.38%
Peer 2	0	0.00%	5	17.24%	--	--	14	43.75%
Other Peer	3	4.55%	2	6.90%	--	--	0	0.00%
Preservice Teacher	11	16.67%	5	17.24%	--	--	1	3.13%
Co-op Teacher	0	0.00%	0	0.00%	--	--	7	21.88%
Paraprofessional	35	53.03%	1	3.45%	--	--	0	0.00%
Other Adult	23	34.85%	9	31.03%	--	--	2	6.25%
Type of Interaction								
Social	37	56.06%	6	20.69%	--	--	10	31.25%
Task Related	29	43.94%	23	79.31%	--	--	22	68.75%
Unknown	0	0.00%	0	0.00%	--	--	0	0.00%
Adult Proximity	66	100.00%	27	93.10%	--	--	21	65.63%
Adult Prompting	0	0.00%	0	0.00%	--	--	1	3.13%

Notes: Freq. = Frequency of intervals. -- = No data recorded for David's focal group due to inclement weather during this session in the community.
[a]n=66 intervals, [b]n=29 intervals, [c]n=0 intervals, [d]n=32 intervals.

Table 15

Video Observation Contextual Factors Frequency Data Across Focal Groups

Contextual Variables	Lamar's Focal Group[a] Freq.	Intervals (%)	Bea's Focal Group[b] Freq.	Intervals (%)	David's Focal Group[c] Freq.	Intervals (%)	Matt's Focal Group[d] Freq.	Intervals (%)
Adult Proximity	581	46.11%	723	64.84%	369	28.30%	484	59.10%
Adult Prompting	76	6.03%	76	6.82%	98	7.52%	57	6.96%
Collaborative Task Focal Student	220	17.46%	239	21.43%	372	28.53%	73	8.91%
Collaborative Task Peer 1	218	17.30%	430	38.57%	474	36.35%	69	8.42%
Collaborative Task Peer 2	134	10.63%	311	27.89%	537	41.18%	90	10.99%
Independent Task Focal Student	603	47.86%	325	29.15%	411	31.52%	490	59.83%
Independent Task Peer 1	562	44.60%	311	27.89%	338	25.92%	435	53.11%
Independent Task Peer 2	548	43.49%	437	39.19%	315	24.16%	382	46.64%
No Task Focal Student	438	34.76%	610	54.71%	528	40.49%	256	31.26%
No Task Peer 1	342	27.14%	192	17.22%	310	23.77%	241	29.43%
No Task Peer 2	336	26.67%	157	14.08%	277	21.24%	111	13.55%

Notes: Freq. = Frequency of intervals.
[a]n=1260 intervals, [b]n=1115 intervals, [c]n=1304 intervals, [d]n=819 intervals.

Table 16

Cases 1-4: Significant Findings Regarding Composition of Focal Group and Peer Interaction Variables from Multivariate Regression Analysis Model

Peer Interaction Outcome Variables	Obs	Parm	R-sq	F	P
Initiations					
Focal Student	4498	17	0.0128	3.623698	0
Peers	4498	17	0.0275	7.927328	0
Responses					
Focal Student	4498	17	0.1402	45.6805	0
Peers	4498	17	0.1037	32.41592	0
Reciprocal Interactions	4498	17	0.1223	39.02543	0
Type of Interaction					
Social	4498	17	0.1202	38.24977	0
Task Related	4498	17	0.073	22.06412	0
Unknown	4498	17	0.0214	6.114648	0
Common Interest	4498	17	0.0983	30.54028	0

Notes: Obs = The total number of intervals. Parm = The parameters equals the number of predictor variables plus the number of video observation sessions included in the model. R-sq = the proportion of variance in the outcome variable which can be explained by the independent variable (Will_Com). F = F-statistic. P = 2-tailed p-values ("Stata Annotated", 2014). Will_Com = Belonging to a *Willingness to help with mixed common interests group.* Findings were included in the table if p was less than or equal to 0.05.

Table 17

Cases 1-4: Significant Findings Regarding Composition of Focal Group and Individual Peer Interaction Variables from Multivariate Regression Analysis

Peer Interaction Outcome Variables	Coef.	Std. Err.	t	p	[95% Conf.	Interval]
Focal Student Initiating						
Will_Com	-0.0872513	0.0176396	-4.95	0	-0.1218337	-0.0526689
Focal Student Responding						
Will_Com	-0.1228638	0.0408671	-3.01	0.003	-0.2029835	-0.042744
Peers Responding						
Will_Com	-0.1093338	0.0357917	-3.05	0.002	-0.1795033	-0.0391644
Reciprocal Interactions						
Will_Com	-0.1244972	0.0416143	-2.99	0.003	-0.2060817	-0.0429128

Notes: Coef. = Coefficient values for the regression equation for predicting the dependent variable from the independent variable. Std. Err. = Standard errors associated with the coefficients. t = The t-statistics used in testing whether a given coefficient is significantly different from zero. p = This column shows the 2-tailed p-values. [95% Conf. Interval] = These are the 95% confidence intervals for the coefficients. The confidence intervals are related to the p-values such that the coefficient will not be statistically significant if the confidence interval includes 0 ("Stata Annotated", 2014). Will_Com = Belonging to a *Willingness to help with mixed common interest group*.

Table 18

*Lamar, Case 1: Significant Findings Regarding **Type of Task** and Peer Interaction Variables from Multivariate Regression Analysis Model*

Peer Interaction Outcome Variables	Obs	Parm	R-sq	F	P
Initiations					
Peer 1	1260	13	0.0198	2.099289	0.0146
Responses					
Focal Student	1260	13	0.2716	38.74517	0
Peer 1	1260	13	0.3966	68.31065	0
Peer 2	1260	13	0.3494	55.8166	0
Reciprocal Interactions	1260	13	0.2886	42.15848	0
Type of Interaction					
Social	1260	13	0.1556	19.15209	0
Task Related	1260	13	0.4658	90.61368	0
Common Interest	1260	13	0.1168	13.73627	0

Notes: Obs = The total number of intervals. Parm = The parameters equals the number of predictor variables plus the number of video observation sessions included in the model. R-sq = the proportion of variance in the outcome variable which can be explained by the independent variables for Task Type (Collaborative task, Independent task, and No task). F = F-statistic. P = 2-tailed p-values ("Stata Annotated", 2014). Findings were included in the table if p was less than or equal to 0.05.

Table 19

*Lamar, Case 1: Significant Findings Regarding **Type of Task** and Individual Peer Interaction Variables from Multivariate Regression Analysis*

Peer Interaction Outcome Variables	Coef.	Std. Err.	t	p	[95% Conf.	Interval]
Peer 1 Initiating						
Collaborative task Peer 1	-0.0208429	0.0081998	-2.54	0.011	-0.0369298	-0.004756
Peer 2 Initiating						
No task Peer 2	0.0100963	0.0049549	2.04	0.042	0.0003754	0.0198171
Focal Student Responding						
Independent task Peer 2	0.0752067	0.0363398	2.07	0.039	0.0039128	0.1465006
No task Peer 1	-0.6095747	0.1557687	-3.91	0	-0.9151723	-0.3039771
No task Peer 2	-0.1230431	0.0414933	-2.97	0.003	-0.2044475	-0.0416388
Peer 1 Responding						
Collaborative task Focal student	0.3483343	0.1227531	2.84	0.005	0.1075089	0.5891598
Collaborative task Peer 1	0.470816	0.0358501	13.13	0	0.4004828	0.5411492
Collaborative task Peer 2	-0.1246099	0.0409318	-3.04	0.002	-0.2049126	-0.0443072
Independent Peer 1	0.0813369	0.0308849	2.63	0.009	0.0207448	0.141929
No task Peer 1	0.1845548	0.0324731	5.68	0	0.1208469	0.2482627
No task Peer 2	-0.0650473	0.0275335	-2.36	0.018	-0.1190644	-0.0110302
Peer 2 Responding						
Collaborative task Focal student	-0.2637301	0.1265052	-2.08	0.037	-0.5119167	-0.0155435
Collaborative task Peer 1	-0.1500984	0.0369459	-4.06	0	-0.2225814	-0.0776153
Collaborative task Peer 2	0.7248496	0.0421829	17.18	0	0.6420923	0.8076068
Independent Focal student	-0.2518362	0.1244481	-2.02	0.043	-0.495987	-0.0076855
Independent Peer 1	-0.0622927	0.0318289	-1.96	0.051	-0.1247369	0.0001515
Independent Peer 2	0.2197524	0.0293092	7.5	0	0.1622517	0.2772532
No task Peer 1	-0.1497682	0.0334656	-4.48	0	-0.2154233	-0.084113
No task Peer 2	0.1049568	0.0283751	3.7	0	0.0492886	0.160625
Reciprocal Interactions						
No task Peer 1	-0.6128714	0.1532007	-4	0	-0.913431	-0.3123119
No task Peer 2	-0.1408117	0.0408092	-3.45	0.001	-0.220874	-0.0607494

Social Interaction						
Collaborative task Focal student	-0.4471931	0.1706206	-2.62	0.009	-0.7819283	-0.112458
Collaborative task Peer 1	-0.1499874	0.0498298	-3.01	0.003	-0.2477469	-0.0522278
Collaborative task Peer 2	0.1626392	0.0568931	2.86	0.004	0.0510225	0.2742559
Independent Peer 2	0.1107026	0.03953	2.8	0.005	0.03315	0.1882553
No task Peer 1	-0.1068094	0.0451359	-2.37	0.018	-0.1953601	-0.0182587
Task Related Interaction						
Collaborative task Focal student	0.3125119	0.1413185	2.21	0.027	0.0352636	0.5897602
Collaborative task Peer 1	0.1811119	0.0412721	4.39	0	0.1001414	0.2620824
Collaborative task Peer 2	-0.1366871	0.0471224	-2.9	0.004	-0.229135	-0.0442393
No task Focal student	-0.4793029	0.1403434	-3.42	0.001	-0.7546382	-0.2039676

Notes: Coef. = Coefficient values for the regression equation for predicting the dependent variable from the independent variable. Std. Err. = Standard errors associated with the coefficients. t = The t-statistics used in testing whether a given coefficient is significantly different from zero. p = This column shows the 2-tailed p-values. [95% Conf. Interval] = These are the 95% confidence intervals for the coefficients. The confidence intervals are related to the p-values such that the coefficient will not be statistically significant if the confidence interval includes 0 ("Stata Annotated", 2014). Findings were included in the table if p was less than or equal to 0.05.

Table 20

*Lamar, Case 1: Significant Findings Regarding **Adult Physical Proximity** and Peer Interaction Variables from Multivariate Regression Analysis Model*

Peer Interaction Outcome Variables	Obs	Parm	R-sq	F	P
Responses					
Focal Student	1260	5	0.1229	43.95169	0
Peer 1	1260	5	0.1221	43.63919	0
Peer 2	1260	5	0.0763	25.93221	0
Reciprocal Interactions	1260	5	0.077	26.18232	0
Type of Interaction					
Social	1260	5	0.077	26.18232	0
Task Related	1260	5	0.2491	104.0588	0
Common Interest	1260	5	0.042	13.74908	0

Notes: Obs = The total number of intervals. Parm = The parameters equals the number of predictor variables plus the number of video observation sessions included in the model. R-sq = the proportion of variance in the outcome variable which can be explained by the independent variable Adult Physical Proximity. F = F-statistic. P = 2-tailed p-values ("Stata Annotated", 2014). Findings were included in the table if p was less than or equal to 0.05.

Table 21

*Lamar, Case 1: Significant Findings Regarding **Adult Physical Proximity** and Individual Peer Interaction Variables from Multivariate Regression Analysis*

Peer Interaction Outcome Variables	Coef.	Std. Err.	t	p	[95% Conf.	Interval]
Focal Student Responding						
Adult proximity	0.3566034	0.0272614	13.08	0	0.3031205	0.4100863
Peer 1 Responding						
Adult proximity	0.0667679	0.023452	2.85	0.004	0.0207584	0.1127773
Reciprocal Interactions						
Adult proximity	0.3764987	0.026784	14.06	0	0.3239524	0.429045
Task Related Interactions						
Adult proximity	0.3929427	0.0265382	14.81	0	0.3408786	0.4450068

Notes: Coef. = Coefficient values for the regression equation for predicting the dependent variable from the independent variable. Std. Err. = Standard errors associated with the coefficients. t = The t-statistics used in testing whether a given coefficient is significantly different from zero. p = This column shows the 2-tailed p-values. [95% Conf. Interval] = These are the 95% confidence intervals for the coefficients. The confidence intervals are related to the p-values such that the coefficient will not be statistically significant if the confidence interval includes 0 ("Stata Annotated", 2014). Findings were included in the table if p was less than or equal to 0.05.

Table 22

*Lamar, Case 1: Significant Findings Regarding **Adult Physical Prompting** and Peer Interaction Variables from Multivariate Regression Analysis Model*

Peer Interaction Outcome Variables	Obs	Parm	R-sq	F	P
Responses					
Peer 1	1260	5	0.1192	42.44529	0
Peer 2	1260	5	0.0787	26.80874	0
Reciprocal Interactions	1260	5	0.0111	3.513733	0.0073
Type of Interaction					
Social	1260	5	0.081	27.66826	0
Task Related	1260	5	0.1241	44.45655	0
Common Interest	1260	5	0.0435	14.28548	0

Notes: Obs = The total number of intervals. Parm = The parameters equals the number of predictor variables plus the number of video observation sessions included in the model. R-sq = the proportion of variance in the outcome variable which can be explained by the independent variable Adult Prompting. F = F-statistic. P = 2-tailed p-values ("Stata Annotated", 2014). Findings were included in the table if p was less than or equal to 0.05.

Table 23

Lamar, Case 1: Significant Findings Regarding **Adult Physical Prompting** *and Individual Peer Interaction Variables from Multivariate Regression Analysis*

Peer Interaction Outcome Variables	Coef.	Std. Err.	t	p	[95% Conf.	Interval]
Focal Student Initiating						
Adult prompting	-0.051514	0.0246875	-2.09	0.037	-0.0999474	-0.0030807
Peer 1 Responding						
Adult prompting	0.0881222	0.0447036	1.97	0.049	0.0004202	0.1758242
Social Interactions						
Adult prompting	-0.1520094	0.0536494	-2.83	0.005	-0.2572618	-0.0467569
Task Related Interactions						
Adult prompting	0.1630023	0.0545418	2.99	0.003	0.0559993	0.2700054

Notes: Coef. = Coefficient values for the regression equation for predicting the dependent variable from the independent variable. Std. Err. = Standard errors associated with the coefficients. t = The t-statistics used in testing whether a given coefficient is significantly different from zero. p = This column shows the 2-tailed p-values. [95% Conf. Interval] = These are the 95% confidence intervals for the coefficients. The confidence intervals are related to the p-values such that the coefficient will not be statistically significant if the confidence interval includes 0 ("Stata Annotated", 2014). Findings were included in the table if p was less than or equal to 0.05.

Table 24

Bea, Case 2: Summary of Peer and Adult Interactions and the Relationship of Contextual Factors to Peer Interactions

Interaction and Contextual Factors	Qualitative Findings	Quantitative Findings	Congruence/Incongruence or Expansion of Findings
Peer and Adult Interactions			
Frequency and ease of interacting	(a) Challenging at first, but peer interactions became more natural and frequent over the course of the project, (b) preservice teachers had more frequent interactions at the beginning of the project that decreased as peers interacted more, and (c) peers did not consistently recognize Bea's nonverbal attempts to communicate	The percentage of intervals in which peers initiated interactions with Bea increased over the course of the project. The percentage of intervals in which the preservice teachers initiated interactions with Bea decreased over the course of the project. Bea had a higher percentage of intervals initiating and responding to peers and adults than either peer initiating or responding to her. Low relative frequency of interaction for all students in focal group (means for responding ranged from 6.10% to 34.17 % of intervals). 38.39% of Bea's interactions were reciprocal.	Congruent: Low relative frequency of Bea responding to peers and adults and peers responding to her indicates interactions were challenging. Increasing percentage of intervals in which the peers responded to Bea matches adult and peer perceptions of increasing frequency of interactions over time. Low relative percentage of reciprocal interactions involving Bea indicates Bea's attempts to communicate were often unsuccessful.

Type of interaction and common interest interactions	Social and task related interactions. More instances of task related interactions observed. Task related interactions typically involved adults and peers providing assistance or directions to Bea, praising Bea, asking Bea to make a task related choice, and adults asking Bea questions that were then answered verbally by peers. Narrow range of social interactions observed, including greetings/farewells, Bea attempting to gain the attention of a conversation partner, and prompts for Bea to manage a personal care issue. No common interest from survey discussed according to adults and peers.	The percentage of task related interactions was 32.11% of intervals. The percentage of social interactions was 13.00% of intervals. Common interests not discussed during any intervals.	Congruent: More task related interactions than social interactions. Adult and peer perception that common interests were not discussed match the quantitative findings.
Group functioning	(a) Students began working individually, but came together to work well as a team, (b) the group members were respectful of each other and adults, and (c) Bea and her peers enjoyed interacting with each other while participating in the project.		Expansion.

Supports	Adults provided all supports to Bea initially, and the peers gradually provided an increasing amount of support to Bea. Supports included providing verbal and physical prompts and hand-over-hand assistance to perform tasks. The peers also provided support with mobility during the last session in the community.		Expansion.
Relationship of Contextual Variables and Peer Interactions			
Composition of the focal group	The adults and peers stated that the group did not discuss the two common interests that formed their group, but that having those in common may have helped them work together better.	Belonging to a *mixed willingness to help with a shared common interest group* was positively associated with all of the peer interaction variables.	Congruent: Perceptions of adults, that the shared common interest among the students increased increase peer interactions, matches the quantitative findings that this type of group is associated with increased peer interactions.
Task type	One preservice teacher described Bea and her peers as having task related interactions during collaborative tasks, such as discussing the project materials. One peer stated when the peers were working independently while creating the beads and centerpieces that they did not interact with Bea as much.	Bea's engagement in collaborative tasks was associated with an increased percentage of intervals with task related interactions. Bea's engagement in independent tasks was associated with a decreased percentage of intervals with social interactions.	Congruent: Perceptions of adults that collaborative tasks are associated with increased task related interactions and the perception of one peer that independent are associated with decreased social interactions match the quantitative findings.

Adult physical proximity to Bea	Preservice teachers described adult physical proximity as resulting in decreased peer interactions.	Adult physical proximity to Bea was found to be associated with an increased percentage of intervals in which Neil initiated interactions with Bea, Bea responded to peers and adults, peers responded to Bea, reciprocal interactions involving Bea, and social and task related interactions.	Incongruent: Perception that adult physical proximity resulted in decreased peer interactions does not match quantitative findings of increased peer responses.
Adult prompting	Preservice teachers described adult physical prompting as resulting in increased peer interactions and involved prompting for both task related interactions.	Adult prompting was found to be associated with peers responding to Bea, and social and task related interactions. The percentage of intervals in which peers responded to Bea increase, social interactions decreased, and task related interactions increased, with adult prompting.	Congruent: Perception that peer interactions and task related interactions increased with adult prompting matches the quantitative findings.

Table 25

Bea, Case 2: Summary of Roles Assumed

Focal Student Role Categories	Roles Described by Adults	Roles Described by Peers	Roles Observed on Videos	Roles that were Incongruent (observed on videos, but not described by adults or peers)
Group building	New disability-related experience provider, collaborative purpose provider, positive energizer, and praise receiver.	New disability-related experience provider, collaborative purpose provider, positive energizer, and praise receiver.	New disability-related experience provider, collaborative purpose provider, conversation starter/maintainer, greeter, outsider seeking a way in, positive energizer, and praise receiver.	Conversation starter/maintainer, greeter and outsider seeking a way in.
Task Completion	Performing (task performer, skill deficit contributor); offering (decision contributor); and receiving (assistance receiver).	Performing (task performer, skill deficit contributor); offering (decision contributor); and receiving (assistance receiver).	Performing (task performer, skill deficit contributor); offering (decision contributor, materials sharer); receiving (assistance receiver, direction receiver); and exploring (materials examiner).	Receiving (direction receiver); offering (materials sharer); and exploring (materials examiner).
Individualistic	None.	None.	Ignorer and social skills offender.	Ignorer and social skills offender.
Neutral	None.	None.	Task observer and dependent non-participant.	Task observer and dependent non-participant.

Table 26

*Bea, Case 2: Significant Findings Regarding **Type of Task** and Peer Interaction Variables from Multivariate Regression Analysis Model*

Peer Interaction Outcome Variables	Obs	Parm	R-sq	F	P
Initiations					
Peer 1	1115	13	0.0839	8.409464	0
Peer 2	1115	13	0.0492	4.74871	0
Responses					
Focal Student	1115	13	0.2294	27.33412	0
Peer 1	1115	13	0.309	41.05705	0
Peer 2	1115	13	0.253	31.1029	0
Reciprocal Interactions	1115	13	0.2314	27.64813	0
Type of Interaction					
Social	1115	13	0.0806	8.053499	0
Task Related	1115	13	0.4374	71.4057	0
Unknown	1115	13	0.023	2.157602	0.0118

Notes: Obs = The total number of intervals. Parm = The parameters equals the number of predictor variables plus the number of video observation sessions included in the model. R-sq = the proportion of variance in the outcome variable which can be explained by the independent variables for Task Type (Collaborative task, Independent task, and No task). F = F-statistic. P = 2-tailed p-values ("Stata Annotated", 2014). Findings were included in the table if p was less than or equal to 0.05.

Table 27

*Bea, Case 2: Significant Findings Regarding **Type of Task** and Individual Peer Interaction Variables from Multivariate Regression Analysis*

Peer Interaction Outcome Variables	Coef.	Std. Err.	t	p	[95% Conf.	Interval]
Peer 1 Initiating						
Collaborative task Focal student	0.0431567	0.0215598	2	0.046	0.0008537	0.0854597
Collaborative task Peer 1	0.0452586	0.0148128	3.06	0.002	0.016194	0.0743231
Collaborative task Peer 2	-0.0402527	0.0141119	-2.85	0.004	-0.0679419	-0.0125635
Peer 2 Initiating						
Collaborative task Peer 2	0.0370604	0.010217	3.63	0	0.0170135	0.0571073
Focal Student Responding						
Collaborative task Focal student	0.1366664	0.0674345	2.03	0.043	0.0043519	0.268981
Collaborative task Peer 2	-0.0962168	0.0441389	-2.18	0.029	-0.1828226	-0.0096109
Independent task Focal student	-0.1512406	0.0604855	-2.5	0.013	-0.2699204	-0.0325609
Independent task Peer 2	-0.0807356	0.0402675	-2	0.045	-0.1597452	-0.0017259
No task Focal student	-0.3754698	0.061944	-6.06	0	-0.4970113	-0.2539283
No task Peer 1	-0.1798734	0.0518053	-3.47	0.001	-0.2815215	-0.0782253
Peer 1 Responding						
Collaborative task Focal student	0.2777977	0.0430663	6.45	0	0.1932966	0.3622988
Collaborative task Peer 1	0.1258247	0.029589	4.25	0	0.0677676	0.1838819
Collaborative task Peer 2	-0.0616964	0.0281888	-2.19	0.029	-0.1170062	-0.0063866
Independent Focal student	-0.1067608	0.0386283	-2.76	0.006	-0.1825542	-0.0309674
Peer 2 Responding						
Collaborative task Focal student	0.2445796	0.0334995	7.3	0	0.1788496	0.3103097
Collaborative task Peer 1	-0.096055	0.0230161	-4.17	0	-0.1412153	-0.0508947
Collaborative task Peer 2	0.1811342	0.0219269	8.26	0	0.1381109	0.2241574
Reciprocal Interactions						
Collaborative task Peer 2	-0.1323292	0.0452002	-2.93	0.003	-0.2210174	-0.0436411
Independent Focal student	-0.2063156	0.0619398	-3.33	0.001	-0.3278488	-0.0847824
No task Focal student	-0.4300299	0.0634333	-6.78	0	-0.5544937	-0.3055661
No task Peer 1	-0.2131906	0.0530508	-4.02	0	-0.3172827	-0.1090985

Social Interaction

	Coef.	Std. Err.	t	p	[95% Conf.	Interval]
Collaborative task Peer 1	-0.0985958	0.0358888	-2.75	0.006	-0.169014	-0.0281776
Independent Focal student	-0.1485929	0.0468528	-3.17	0.002	-0.2405236	-0.0566622
No task Peer 1	-0.1509032	0.040129	-3.76	0	-0.229641	-0.0721654
Task Related Interaction						
Collaborative task Focal student	0.1854671	0.0567189	3.27	0.001	0.0741778	0.2967564
Collaborative task Peer 2	-0.0936307	0.0371251	-2.52	0.012	-0.1664746	-0.0207868
Independent Peer 2	-0.1442879	0.0338689	-4.26	0	-0.2107427	-0.0778332
No task Focal student	-0.4862721	0.0521009	-9.33	0	-0.5885002	-0.3840439
No task Peer 2	-0.1290681	0.0419228	-3.08	0.002	-0.2113255	-0.0468106

Notes: Coef. = Coefficient values for the regression equation for predicting the dependent variable from the independent variable. Std. Err. = Standard errors associated with the coefficients. t = The t-statistics used in testing whether a given coefficient is significantly different from zero. p = This column shows the 2-tailed p-values. [95% Conf. Interval] = These are the 95% confidence intervals for the coefficients. The confidence intervals are related to the p-values such that the coefficient will not be statistically significant if the confidence interval includes 0 ("Stata Annotated", 2014). Findings were included in the table if p was less than or equal to 0.05.

Table 28

*Bea, Case 2: Significant Findings Regarding **Adult Physical Proximity** and Peer Interaction Variables from Multivariate Regression Analysis Model*

Peer Interaction Outcome Variables	Obs	Parm	R-sq	F	P
Initiations					
Peer 1	1115	5	0.0196	5.539661	0.0002
Responses					
Focal Student	1115	5	0.1351	43.3278	0
Peer 1	1115	5	0.0189	5.334647	0.0003
Peer 2	1115	5	0.0117	3.275938	0.0111
Reciprocal Interactions	1115	5	0.2037	70.97158	0
Type of Interaction					
Social	1115	5	0.0789	23.75632	0
Task Related	1115	5	0.1102	34.38104	0

Notes: Obs = The total number of intervals. Parm = The parameters equals the number of predictor variables plus the number of video observation sessions included in the model. R-sq = the proportion of variance in the outcome variable which can be explained by the independent variable Adult Physical Proximity. F = F-statistic. P = 2-tailed p-values ("Stata Annotated", 2014). Findings were included in the table if p was less than or equal to 0.05.

Table 29

*Bea, Case 2: Significant Findings Regarding **Adult Physical Proximity** and Individual Peer Interaction Variables from Multivariate Regression Analysis*

Peer Interaction Outcome Variables	Coef.	Std. Err.	t	p	[95% Conf.	Interval]
Focal Student Responding						
Adult proximity	0.4017942	0.033137	12.13	0	0.336776	0.4668124
Peer 1 Responding						
Adult proximity	0.0868361	0.0238016	3.65	0	0.0401349	0.1335372
Reciprocal Interactions						
Adult proximity	0.5111269	0.0326028	15.68	0	0.4471568	0.575097
Social Interactions						
Adult proximity	0.1945098	0.0242516	8.02	0	0.1469256	0.2420939
Task Related Interactions						
Adult proximity	0.3319788	0.0330852	10.03	0	0.2670622	0.3968954

Notes: Coef. = Coefficient values for the regression equation for predicting the dependent variable from the independent variable. Std. Err. = Standard errors associated with the coefficients. t = The t-statistics used in testing whether a given coefficient is significantly different from zero. p = This column shows the 2-tailed p-values. [95% Conf. Interval] = These are the 95% confidence intervals for the coefficients. The confidence intervals are related to the p-values such that the coefficient will not be statistically significant if the confidence interval includes 0 ("Stata Annotated", 2014). Findings were included in the table if p was less than or equal to 0.05.

Table 30

*Bea, Case 2: Significant Findings Regarding **Adult Physical Prompting** and Peer Interaction Variables from Multivariate Regression Analysis Model*

Peer Interaction Outcome Variables	Obs	Parm	R-sq	F	P
Initiations					
Peer 1	1115	5	0.0183	5.160751	0.0004
Responses					
Focal Student	1115	5	0.0235	6.683907	0
Peer 1	1115	5	0.0274	7.814607	0
Peer 2	1115	5	0.022	6.234031	0.0001
Reciprocal Interactions	1115	5	0.0291	8.317207	0
Type of Interaction					
Social	1115	5	0.032	9.166666	0
Task Related	1115	5	0.0416	12.04156	0

Notes: Obs = The total number of intervals. Parm = The parameters equals the number of predictor variables plus the number of video observation sessions included in the model. R-sq = the proportion of variance in the outcome variable which can be explained by the independent variable Adult Prompting. F = F-statistic. P = 2-tailed p-values ("Stata Annotated", 2014). Findings were included in the table if p was less than or equal to 0.05.

Table 31

*Bea, Case 2: Significant Findings Regarding **Adult Physical Prompting** and Individual Peer Interaction Variables from Multivariate Regression Analysis*

Peer Interaction Outcome Variables	Coef.	Std. Err.	t	p	[95% Conf.	Interval]
Peer 1 Responding						
Adult prompting	0.1799707	0.0373968	4.81	0	0.1065943	0.2533472
Peer 2 Responding						
Adult prompting	0.1078561	0.0280566	3.84	0	0.0528061	0.1629061
Social Interactions						
Adult prompting	-0.1071287	0.0392324	-2.73	0.006	-0.1841067	-0.0301507
Task Related Interactions						
Adult prompting	0.2024848	0.0541873	3.74	0	0.0961638	0.3088059

Notes: Coef. = Coefficient values for the regression equation for predicting the dependent variable from the independent variable. Std. Err. = Standard errors associated with the coefficients. t = The t-statistics used in testing whether a given coefficient is significantly different from zero. p = This column shows the 2-tailed p-values. [95% Conf. Interval] = These are the 95% confidence intervals for the coefficients. The confidence intervals are related to the p-values such that the coefficient will not be statistically significant if the confidence interval includes 0 ("Stata Annotated", 2014). Findings were included in the table if p was less than or equal to 0.05.

Table 32

David, Case 3: Summary of Peer and Adult Interactions and the Relationship of Contextual Factors to Peer Interactions

Interaction and Contextual Factors	Qualitative Findings	Quantitative Findings	Congruence/Incongruence or Expansion of Findings
Peer and Adult Interactions			
Frequency and ease of interacting	(a) Whispered one word answers, (b) choppy, with David rarely initiating interactions, and (c) awkward and challenging attempts by peers to interact.	David had a higher percentage of intervals initiating and responding than either peer. Low relative frequency of interaction for all students in focal group (percentages for responding ranged from 21.24% to 36.12% of intervals across students).	Partially congruent: Low relative frequency indicates interactions were challenging.
Type of interaction and common interest interactions	Social and task related interactions. More examples of task related interactions observed. Social interactions typically involved peer asking how David was doing. Task related interactions focused on discussing procedures for tasks, offering opinions, and praising David.

No common interest from survey discussed according to adults. Common interest from survey briefly discussed according to peer. | The percentage of task related interactions was 36.27% of intervals. The percentage of social interactions was 9.13% of intervals.

Common interest only discussed during a single interval. | Congruent: More task related interactions than social interactions. Peer perception matches low frequency of common interest discussed from the quantitative findings. |

Group functioning	(a) Respectful; (b) a mix of collaborative and independent work depending on the task; (c) variable perceptions of effectiveness working together ("decent", "really well", and "probably one of the best.").		Expansion.
Supports	Adults provided supports to the whole group during one difficult task (assembling Ben's Bells). Peers would "check in" with David to see if he needed support, but not much was needed.		Expansion.
Relationship of Contextual Variables and Peer Interactions			
Composition of the focal group	The adults described the shared common interest as not having an impact to increase peer interactions in this group.	Belonging to a *mixed willingness to help with a shared common interest group* was positively associated with all of the peer interaction variables.	Incongruent: Perceptions of adults, that the shared common interest among the students did not increase peer interactions, does not match the quantitative findings that this type of group is associated with increased peer interactions.
Task type	One preservice teacher described David and his peers as having task related interactions during collaborative tasks, such as selecting colors for painting and discussing gathering materials.	David and Regina's engagement in collaborative tasks was associated with an increased percentage of intervals with task related interactions.	Congruent: Collaborative tasks are associated with increased task related interactions.

Adult physical proximity to David	Preservice teacher described adult physical proximity as resulting in decreased peer interactions. Peers described adult physical proximity as having no impact on peer interactions.	Adult physical proximity to David was found to be associated with a decreased percentage of intervals with initiations by the peers, but an increased percentage of intervals with peer responses and task related interactions.	Incongruent: Perception that adult physical proximity resulted in decreased peer interactions or that there was no impact does not match quantitative findings of increased peer responses. Congruent: Peer initiations decreased with adult physical proximity.
Adult prompting	Preservice teachers described adult physical prompting as resulting in increased peer interactions and involved prompting for both task related and social interactions.	Adult prompting was found to be associated with increased percentage of intervals responding by David and both peers, increased reciprocal interactions, and increased task related interactions.	Congruent: Perception that peer interactions and task related interactions increased with adult prompting matches the quantitative findings.

Table 33

David, Case 3: Summary of Roles Assumed

Focal Student Role Categories	Roles Described by Adults	Roles Described by Peers	Roles Observed on Videos	Roles that were Incongruent (observed on videos, but not described by adults or peers)
Group building	Conversation starter/maintainer and positive energizer.	Conversation starter/maintainer and positive energizer.	Conversation starter/maintainer, greeter, positive energizer, and praise receiver.	Greeter and praise receiver.
Task Completion	Performing (task performer, skill deficit contributor, turn taker); receiving (assistance receiver, direction receiver); and offering (decision contributor).	Performing (task performer, skill deficit contributor, materials organizer, turn taker); receiving (assistance receiver, direction receiver); and offering (decision contributor).	Performing (task performer, skill deficit contributor, materials organizer, turn taker, assistance decliner); receiving (assistance receiver, direction receiver); requesting (assistance requester); offering (decision contributor); and exploring (materials examiner).	Performing (assistance decliner); requesting (assistance requester); and exploring (materials examiner).
Individualistic	None.	None.	Attention seeker, ignorer, social skills offender, and task loafer.	Attention seeker, ignorer, social skills offender, and task loafer.
Neutral	None.	None.	Dependent non-participant, and task observer.	Dependent non-participant, and task observer.

Table 34

*David, Case 3: Significant Findings Regarding **Type of Task** and Peer Interaction Variables from Multivariate Regression Analysis Model*

Peer Interaction Outcome Variables	Obs	Parm	R-sq	F	P
Initiations					
Focal Student	1304	14	0.0342	3.516285	0
Peer 1	1304	14	0.0552	5.795863	0
Peer 2	1304	14	0.0632	6.696078	0
Responses					
Focal Student	1304	14	0.3982	65.65655	0
Peer 1	1304	14	0.4399	77.92763	0
Peer 2	1304	14	0.463	85.55782	0
Reciprocal Interactions	1304	14	0.4288	74.48981	0
Type of Interaction					
Social	1304	14	0.0929	10.15769	0
Task Related	1304	14	0.5384	115.7514	0

Notes: Obs = The total number of intervals. Parm = The parameters equals the number of predictor variables plus the number of video observation sessions included in the model. R-sq = the proportion of variance in the outcome variable which can be explained by the independent variables for Task Type (Collaborative task, Independent task, and No task). F = F-statistic. P = 2-tailed p-values ("Stata Annotated", 2014). Findings were included in the table if p was less than or equal to 0.05.

Table 35

*David, Case 3: Significant Findings Regarding **Type of Task** and Individual Peer Interaction Variables from Multivariate Regression Analysis*

Peer Interaction Outcome Variables	Coef.	Std. Err.	t	p	[95% Conf.	Interval]
Focal Student Initiating						
Collaborative task Peer 2	-0.0678873	0.0197343	-3.44	0.001	-0.1066021	-0.0291726
No task Peer 2	-0.0681394	0.0233395	-2.92	0.004	-0.1139269	-0.022352
Peer 1 Initiating						
Collaborative task Peer 1	0.0779429	0.0168208	4.63	0	0.0449438	0.110942
Collaborative task Peer 2	-0.0531904	0.01718	-3.1	0.002	-0.0868942	-0.0194865
No task Peer 1	0.039969	0.0194339	2.06	0.04	0.0018436	0.0780945
Peer 2 Initiating						
Collaborative task Focal student	0.1531563	0.0561778	2.73	0.006	0.0429465	0.2633662
Collaborative task Peer 2	0.1069176	0.0229344	4.66	0	0.0619248	0.1519104
Independent Focal student	0.1193623	0.0558436	2.14	0.033	0.0098081	0.2289164
No task Focal student	0.1198338	0.0558323	2.15	0.032	0.0103017	0.229366
Focal Student Responding						
Collaborative task Focal student	0.2834433	0.107608	2.63	0.009	0.0723375	0.4945491
Collaborative task Peer 1	-0.1377897	0.043012	-3.2	0.001	-0.2221708	-0.0534085
Independent Focal student	-0.2468634	0.1069677	-2.31	0.021	-0.4567132	-0.0370136
Independent Peer 1	-0.1797005	0.0451943	-3.98	0	-0.2683629	-0.0910381
No task Focal student	-0.3817013	0.1069463	-3.57	0	-0.591509	-0.1718936
No task Peer 2	-0.1097375	0.0519562	-2.11	0.035	-0.2116654	-0.0078096
Peer 1 Responding						
Collaborative task Focal student	0.1994382	0.0883994	2.26	0.024	0.0260159	0.3728606
Collaborative task Peer 1	0.4074996	0.0353341	11.53	0	0.3381809	0.4768183
Collaborative task Peer 2	-0.0900745	0.0360888	-2.5	0.013	-0.1608736	-0.0192754
Independent Focal student	-0.1691949	0.0878735	-1.93	0.054	-0.3415855	0.0031957
No task Focal student	-0.1972115	0.0878558	-2.24	0.025	-0.3695674	-0.0248555
No task Peer 1	0.1471012	0.0408233	3.6	0	0.0670139	0.2271884
Peer 2 Responding						

	Coef.	Std. Err.	t	p	[95% Conf.	Interval]
Collaborative task Focal student	0.3102569	0.0882164	3.52	0	0.1371937	0.4833202
Collaborative task Peer 1	-0.0871093	0.035261	-2.47	0.014	-0.1562845	-0.0179342
Collaborative task Peer 2	0.2982375	0.036014	8.28	0	0.227585	0.36889
Independent Focal student	-0.1773268	0.0876915	-2.02	0.043	-0.3493605	-0.0052932
No task Focal student	-0.1821614	0.0876739	-2.08	0.038	-0.3541605	-0.0101623
Reciprocal Interactions						
Collaborative task Focal student	0.2817973	0.1072927	2.63	0.009	0.07131	0.4922847
Collaborative task Peer 1	-0.1122164	0.042886	-2.62	0.009	-0.1963504	-0.0280825
Independent Focal student	-0.2414978	0.1066544	-2.26	0.024	-0.4507328	-0.0322627
Independent Peer 1	-0.1643753	0.0450619	-3.65	0	-0.2527779	-0.0759727
No task Focal student	-0.4103103	0.106633	-3.85	0	-0.6195033	-0.2011173
Social Interaction						
Collaborative task Peer 1	-0.0959859	0.031659	-3.03	0.002	-0.1580947	-0.0338771
Collaborative task Peer 2	-0.0877871	0.0323351	-2.71	0.007	-0.1512223	-0.0243519
Independent Peer 1	-0.0780976	0.0332653	-2.35	0.019	-0.1433576	-0.0128377
Independent Peer 2	-0.0701287	0.0346965	-2.02	0.043	-0.1381964	-0.0020609
No task Peer 2	-0.0999746	0.0382424	-2.61	0.009	-0.1749987	-0.0249506
Task Related Interaction						
Collaborative task Focal student	0.2934482	0.0943268	3.11	0.002	0.1083975	0.4784988
Collaborative task Peer 2	0.1743555	0.0385086	4.53	0	0.0988092	0.2499019
No task Focal student	-0.3924279	0.0937467	-4.19	0	-0.5763407	-0.2085151

Notes: Coef. = Coefficient values for the regression equation for predicting the dependent variable from the independent variable. Std. Err. = Standard errors associated with the coefficients. t = The t-statistics used in testing whether a given coefficient is significantly different from zero. p = This column shows the 2-tailed p-values. [95% Conf. Interval] = These are the 95% confidence intervals for the coefficients. The confidence intervals are related to the p-values such that the coefficient will not be statistically significant if the confidence interval includes 0 ("Stata Annotated", 2014). Findings were included in the table if p was less than or equal to 0.05.

Table 36

*David, Case 3: Significant Findings Regarding **Adult Physical Proximity** and Peer Interaction Variables from Multivariate Regression Analysis Model*

Peer Interaction Outcome Variables	Obs	Parm	R-sq	F	P
Initiations					
Focal Student	1304	6	0.0116	3.040435	0.0098
Peer 1	1304	6	0.0094	2.464446	0.0312
Peer 2	1304	6	0.0116	3.0423	0.0098
Responses					
Focal Student	1304	6	0.1644	51.05801	0
Peer 1	1304	6	0.0681	18.96893	0
Peer 2	1304	6	0.0531	14.56928	0
Reciprocal Interactions	1304	6	0.2126	70.08947	0
Type of Interaction					
Social	1304	6	0.0194	5.123718	0.0001
Task Related	1304	6	0.2229	74.48381	0

Notes: Obs = The total number of intervals. Parm = The parameters equals the number of predictor variables plus the number of video observation sessions included in the model. R-sq = the proportion of variance in the outcome variable which can be explained by the independent variable Adult Physical Proximity. F = F-statistic. P = 2-tailed p-values ("Stata Annotated", 2014). Findings were included in the table if p was less than or equal to 0.05.

Table 37

*David, Case 3: Significant Findings Regarding **Adult Physical Proximity** and Individual Peer Interaction Variables from Multivariate Regression Analysis*

Peer Interaction Outcome Variables	Coef.	Std. Err.	t	p	[95% Conf.	Interval]
Peer 1 Initiating						
Adult proximity	-0.019929	0.0095084	-2.1	0.036	-0.0385826	-0.0012755
Peer 2 Initiating						
Adult proximity	-0.042061	0.0127335	-3.3	0.001	-0.0670415	-0.0170805
Focal Student Responding						
Adult proximity	0.3778129	0.0279807	13.5	0	0.3229205	0.4327052
Peer 1 Responding						
Adult proximity	0.1978728	0.0251609	7.86	0	0.1485124	0.2472332
Peer 2 Responding						
Adult proximity	0.1828127	0.0258487	7.07	0	0.1321028	0.2335226
Reciprocal Interactions						
Adult proximity	0.4631702	0.0277975	16.66	0	0.4086373	0.5177031
Task Related Interactions						
Adult proximity	0.476204	0.0270066	17.63	0	0.4232225	0.5291854

Notes: Coef. = Coefficient values for the regression equation for predicting the dependent variable from the independent variable. Std. Err. = Standard errors associated with the coefficients. t = The t-statistics used in testing whether a given coefficient is significantly different from zero. p = This column shows the 2-tailed p-values. [95% Conf. Interval] = These are the 95% confidence intervals for the coefficients. The confidence intervals are related to the p-values such that the coefficient will not be statistically significant if the confidence interval includes 0 ("Stata Annotated", 2014). Findings were included in the table if p was less than or equal to 0.05.

Table 38

*David, Case 3: Significant Findings Regarding **Adult Physical Prompting** and Peer Interaction Variables from Multivariate Regression Analysis Model*

Peer Interaction Outcome Variables	Obs	Parm	R-sq	F	P
Initiations					
Focal Student	1304	6	0.0111	2.904496	0.0129
Responses					
Focal Student	1304	6	0.0765	21.49321	0
Peer 1	1304	6	0.0928	26.57065	0
Peer 2	1304	6	0.0717	20.06275	0
Reciprocal Interactions	1304	6	0.0841	23.83213	0
Type of Interaction					
Social	1304	6	0.0187	4.946167	0.0002
Task Related	1304	6	0.0912	26.04284	0
Unknown	1304	6	0.019	5.033692	0.0001

Notes: Obs = The total number of intervals. Parm = The parameters equals the number of predictor variables plus the number of video observation sessions included in the model. R-sq = the proportion of variance in the outcome variable which can be explained by the independent variable Adult Prompting. F = F-statistic. P = 2-tailed p-values ("Stata Annotated", 2014). Findings were included in the table if p was less than or equal to 0.05.

Table 39

*David, Case 3: Significant Findings Regarding **Adult Physical Prompting** and Individual Peer Interaction Variables from Multivariate Regression Analysis*

Peer Interaction Outcome Variables	Coef.	Std. Err.	t	p	[95% Conf.	Interval]
Focal Student Responding						
Adult prompting	0.3142564	0.0488167	6.44	0	0.2184883	0.4100246
Peer 1 Responding						
Adult prompting	0.4098196	0.0411977	9.95	0	0.3289983	0.4906409
Peer 2 Responding						
Adult prompting	0.372779	0.0424741	8.78	0	0.2894536	0.4561045
Reciprocal Interactions						
Adult prompting	0.3741886	0.0497538	7.52	0	0.2765819	0.4717953
Task Related Interactions						
Adult prompting	0.4270662	0.0484707	8.81	0	0.3319767	0.5221558

Notes: Coef. = Coefficient values for the regression equation for predicting the dependent variable from the independent variable. Std. Err. = Standard errors associated with the coefficients. t = The t-statistics used in testing whether a given coefficient is significantly different from zero. p = This column shows the 2-tailed p-values. [95% Conf. Interval] = These are the 95% confidence intervals for the coefficients. The confidence intervals are related to the p-values such that the coefficient will not be statistically significant if the confidence interval includes 0 ("Stata Annotated", 2014). Findings were included in the table if p was less than or equal to 0.05.

Table 40

Matt, Case 4: Summary of Peer and Adult Interactions and the Relationship of Contextual Factors to Peer Interactions

Interaction and Contextual Factors	Qualitative Findings	Quantitative Findings	Congruence/ Incongruence or Expansion of Findings
Peer and Adult Interactions			
Frequency and ease of interacting	(a) Quiet, and (b) Matt and one peer began to interact more towards the end of the project.	Matt had a higher percentage of intervals initiating and responding than either peer. Low relative frequency of interactions for all members of focal group (percentages for responding ranged from 5.01% to 24.05 % of intervals); percentage of intervals with reciprocal interactions involving Matt was 27.72%. Ann had increased percentage of intervals initiating and responding to Matt over the course of the project.	Congruent: Low relative frequency of interactions and reciprocity involving Matt indicates a quiet group, and the increase in Ann's interactions over the course of the project match the perceptions of adults.
Type of interaction and common interest interactions	Social and task related interactions. More examples of task related interactions observed and discussed by adults and peers. Social interactions involved discussing pets, holidays, and homecoming activities. Task related interactions focused on discussing procedures for tasks; adults and peers directing Matt; and offering opinions, assistance, and praise. Adults and peers stated that no common interests from survey were discussed.	A greater percentage of intervals involved task related interactions compared to social interactions across video sessions and for the sixth live observation session in the community. Common interests from the survey were discussed in 0% of intervals across the video sessions.	Congruent: The perception of more task related interactions than social interactions matched the quantitative findings. The perception that common interests were not discussed matched the quantitative findings.

Group functioning	(a) Peers ignored Matt's inappropriate task related behavior and encouraged some of his inappropriate social behaviors; (b) a mix of collaborative and independent work, with greater collaborating during painting and distribution sessions; (c) variable perceptions of effectiveness working together, with adults having a perception of greater group functioning ("worked really well together") than the peers ("worked fine together", and "we really just worked on our own").		Expansion.
Supports	(a) Peers provided support; (b) Matt requested help from one peer; (c) Matt typically ignored offers of support by adults.		Expansion.
Relationship of Contextual Variables and Peer Interactions			
Composition of the focal group	Adults state that the common interests were not important enough issues for the students to make a positive impact on peer interactions.	Belonging to a *willingness to help with a mixed common interest group* was negatively associated with all of the peer interaction variables.	Congruent: Perceptions of adults, that the shared common interest between Matt and each peer did not increase peer interactions, matches the quantitative findings that this type of group is associated with decreased peer interactions.

Task type	Preservice teachers described Matt and his peers as having task related interactions involving providing/receiving assistance during collaborative tasks. The preservice teachers and the art teacher described the students as having fewer interactions during independent tasks.	The engagement of Matt, Carrie, and Ann in collaborative tasks was associated with an increased percentage of intervals of initiations by Ann, Matt responding to adults and peers, peers responding to Matt, and an increased percentage of intervals with task related interactions. The engagement of Matt in independent tasks was negatively associated with him initiating interactions.	Congruent: Perception of preservice teachers that collaborative tasks are associated with increased peer interactions and task related interactions matches quantitative findings. Perception of preservice teachers that independent tasks are associated with decreased interactions matches quantitative findings regarding decreased initiating by Matt.
Adult physical proximity to Matt	Preservice teachers described adult physical proximity as resulting in decreased peer interactions. Art teacher described adult physical proximity as having no impact on peer interactions.	Adult physical proximity to Matt was found to be associated with an increased percentage of intervals with Matt responding to adults and peers, peers responding to Matt, and an increase in the percentage of intervals involving task related interactions and reciprocal interactions involving Matt.	Incongruent: Perception that adult physical proximity resulted in decreased peer interactions or that there was no impact does not match quantitative findings of increased peer interactions.

Adult prompting	Preservice teachers perceived adult prompting as resulting in increased peer interactions and that the prompting was focused on task related interactions, especially for peers to provide Matt with support.	Adult prompting was found to be associated with an increased percentage of intervals with initiations by Carrie, Matt responding to adults and peers, peers responding to Matt, reciprocal interactions, and social and task related interactions.	Congruent: Perception that peer interactions and task related interactions increased with adult prompting matches the quantitative findings.

Table 41

Matt, Case 4: Summary of Roles Assumed

Focal Student Roles	Roles Described by Adults	Roles Described by Peers	Roles Observed on Videos	Roles that were Incongruent (observed on videos, but not described by adults or peers)
Group building	Collaborative purpose provider, and positive energizer.	Positive energizer.	Collaborative purpose provider, and positive energizer; conversation starter/maintainer, greeter, praise receiver, and social niceties maintainer.	Conversation starter/maintainer, greeter, praise receiver, and social niceties maintainer.
Task Completion	Performing (task performer, skill deficit contributor, materials organizer); receiving (assistance receiver, direction receiver); offering (decision contributor).	Performing (task performer, skill deficit contributor, materials organizer); receiving (assistance receiver); offering (decision contributor).	Performing (task performer, skill deficit contributor, materials organizer); receiving (assistance receiver, direction receiver); offering (decision contributor, director); requesting (assistance requester); and exploring (materials examiner).	Requesting (assistance requester); offering (director), and exploring (materials examiner).
Individualistic	Materials destroyer/hoarder, social skills offender, and task loafer.	Task loafer (peers complained on video that they had to do all of the cleaning, but did not describe during the interview).	Materials destroyer/hoarder, social skills offender, task loafer, button pusher, and ignorer.	Button pusher and ignorer.
Neutral	None.	None.	Dependent non-participant, task observer, and unnecessary task performer.	Dependent non-participant, task observer, and unnecessary task performer.

Table 42

*Matt, Case 4: Significant Findings Regarding **Type of Task** and Peer Interaction Variables from Multivariate Regression Analysis Model*

Peer Interaction Outcome Variables	Obs	Parm	R-sq	F	P
Initiations					
Peer 1	819	13	0.0344	2.38932	0.0049
Peer 2	819	13	0.1012	7.566393	0
Responses					
Focal Student	819	13	0.248	22.15294	0
Peer 1	819	13	0.0524	3.710704	0
Peer 2	819	13	0.247	22.03106	0
Reciprocal Interactions	819	13	0.2477	22.11	0
Type of Interaction					
Social	819	13	0.0971	7.227015	0
Task Related	819	13	0.3148	30.86504	0
Unknown	819	13	0.0265	1.826293	0.0403

Notes: Obs = The total number of intervals. Parm = The parameters equals the number of predictor variables plus the number of video observation sessions included in the model. R-sq = the proportion of variance in the outcome variable which can be explained by the independent variables for Task Type (Collaborative task, Independent task, and No task). F = F-statistic. P = 2-tailed p-values ("Stata Annotated", 2014). Findings were included in the table if p was less than or equal to 0.05.

Table 43

*Matt, Case 4: Significant Findings Regarding **Type of Task** and Individual Peer Interaction Variables from Multivariate Regression Analysis*

Peer Interaction Outcome Variables	Coef.	Std. Err.	t	p	[95% Conf.	Interval]
Focal Student Initiating						
Independent Peer 2	-0.0577733	0.0292727	-1.97	0.049	-0.1152329	-0.0003136
Peer 2 Initiating						
Collaborative task Peer 2	0.102721	0.0202758	5.07	0	0.0629213	0.1425206
Focal Student Responding						
Collaborative task Focal student	0.3610009	0.1621534	2.23	0.026	0.0427082	0.6792936
No task Focal student	-0.3581939	0.1645553	-2.18	0.03	-0.6812014	-0.0351864
Peer 1 Responding						
Collaborative task Peer 1	0.1052419	0.0434307	2.42	0.016	0.0199913	0.1904925
Independent Peer 2	0.1021328	0.0454542	2.25	0.025	0.0129103	0.1913552
Peer 2 Responding						
Collaborative task Peer 2	0.2908196	0.0497719	5.84	0	0.1931217	0.3885174
Independent Peer 1	0.2133818	0.0527994	4.04	0	0.1097412	0.3170224
No task Peer 1	0.1522695	0.0582605	2.61	0.009	0.0379093	0.2666297
Reciprocal Interactions						
Collaborative task Focal student	0.3535038	0.169854	2.08	0.038	0.0200953	0.6869123
No task Focal student	-0.3481435	0.17237	-2.02	0.044	-0.6864906	-0.0097963
Task Related Interaction						
Collaborative task Focal student	0.4479586	0.1545112	2.9	0.004	0.1446669	0.7512503
Collaborative task Peer 2	0.2439008	0.0724536	3.37	0.001	0.1016808	0.3861208

Notes: Coef. = Coefficient values for the regression equation for predicting the dependent variable from the independent variable. Std. Err. = Standard errors associated with the coefficients. t = The t-statistics used in testing whether a given coefficient is significantly different from zero. p = This column shows the 2-tailed p-values. [95% Conf. Interval] = These are the 95% confidence intervals for the coefficients. The confidence intervals are related to the p-values such that the coefficient will not be statistically significant if the confidence interval includes 0 ("Stata Annotated", 2014). Findings were included in the table if p was less than or equal to 0.05.

Table 44

*Matt, Case 4: Significant Findings Regarding **Adult Physical Proximity** and Peer Interaction Variables from Multivariate Regression Analysis Model*

Peer Interaction Outcome Variables	Obs	Parm	R-sq	F	P
Initiations					
Peer 2	819	5	0.017	3.512974	0.0075
Responses					
Focal Student	819	5	0.0901	20.14038	0
Peer 1	819	5	0.0131	2.701825	0.0295
Peer 2	819	5	0.0575	12.41485	0
Reciprocal Interactions	819	5	0.0978	22.05593	0
Type of Interaction					
Social	819	5	0.0843	18.74426	0
Task Related	819	5	0.1585	38.32138	0

Notes: Obs = The total number of intervals. Parm = The parameters equals the number of predictor variables plus the number of video observation sessions included in the model. R-sq = the proportion of variance in the outcome variable which can be explained by the independent variable Adult Physical Proximity. F = F-statistic. P = 2-tailed p-values ("Stata Annotated", 2014). Findings were included in the table if p was less than or equal to 0.05.

Table 45

*Matt, Case 4: Significant Findings Regarding **Adult Physical Proximity** and Individual Peer Interaction Variables from Multivariate Regression Analysis*

Peer Interaction Outcome Variables	Coef.	Std. Err.	t	p	[95% Conf.	Interval]
Focal Student Responding						
Adult proximity	0.1656993	0.0318411	5.2	0	0.103199	0.2281997
Peer 1 Responding						
Adult proximity	0.0306996	0.0169188	1.81	0.07	-0.0025101	0.0639093
Peer 2 Responding						
Adult proximity	0.0790502	0.0211975	3.73	0	0.0374421	0.1206583
Reciprocal Interactions						
Adult proximity	0.2023023	0.0332033	6.09	0	0.137128	0.2674765
Task Related Interactions						
Adult proximity	0.3243388	0.0305675	10.61	0	0.2643384	0.3843392

Notes: Coef. = Coefficient values for the regression equation for predicting the dependent variable from the independent variable. Std. Err. = Standard errors associated with the coefficients. t = The t-statistics used in testing whether a given coefficient is significantly different from zero. p = This column shows the 2-tailed p-values. [95% Conf. Interval] = These are the 95% confidence intervals for the coefficients. The confidence intervals are related to the p-values such that the coefficient will not be statistically significant if the confidence interval includes 0 ("Stata Annotated", 2014). Findings were included in the table if p was less than or equal to 0.05.

Table 46

*Matt, Case 4: Significant Findings Regarding **Adult Physical Prompting** and Peer Interaction Variables from Multivariate Regression Analysis Model*

Peer Interaction Outcome Variables	Obs	Parm	R-sq	F	P
Initiations					
Peer 1	819	5	0.0216	4.486025	0.0014
Peer 2	819	5	0.0146	3.021867	0.0173
Responses					
Focal Student	819	5	0.0797	17.62101	0
Peer 1	819	5	0.1055	24.01232	0
Peer 2	819	5	0.0728	15.97518	0
Reciprocal Interactions	819	5	0.1062	24.17023	0
Type of Interaction					
Social	819	5	0.0913	20.45537	0
Task Related	819	5	0.0976	22.00422	0

Notes: Obs = The total number of intervals. Parm = The parameters equals the number of predictor variables plus the number of video observation sessions included in the model. R-sq = the proportion of variance in the outcome variable which can be explained by the independent variable Adult Prompting. F = F-statistic. P = 2-tailed p-values ("Stata Annotated", 2014). Findings were included in the table if p was less than or equal to 0.05.

Table 47

*Matt, Case 4: Significant Findings Regarding **Adult Physical Prompting** and Individual Peer Interaction Variables from Multivariate Regression Analysis*

Peer Interaction Outcome Variables	Coef.	Std. Err.	t	p	[95% Conf.	Interval]
Peer 1 Initiating						
Adult prompting	0.0344061	0.0082943	4.15	0	0.0181253	0.0506868
Focal Student Responding						
Adult prompting	0.2388005	0.0569121	4.2	0	0.1270887	0.3505123
Peer 1 Responding						
Adult prompting	0.2681721	0.0286267	9.37	0	0.2119813	0.3243629
Peer 2 Responding						
Adult prompting	0.1961643	0.037367	5.25	0	0.1228172	0.2695114
Reciprocal Interactions						
Adult prompting	0.3944609	0.058737	6.72	0	0.279167	0.5097548
Social Interactions						
Adult prompting	0.1085896	0.0427529	2.54	0.011	0.0246708	0.1925084
Task Related Interactions						
Adult prompting	0.3980526	0.0562582	7.08	0	0.2876243	0.508481

Notes: Coef. = Coefficient values for the regression equation for predicting the dependent variable from the independent variable. Std. Err. = Standard errors associated with the coefficients. t = The t-statistics used in testing whether a given coefficient is significantly different from zero. p = This column shows the 2-tailed p-values. [95% Conf. Interval] = These are the 95% confidence intervals for the coefficients. The confidence intervals are related to the p-values such that the coefficient will not be statistically significant if the confidence interval includes 0 ("Stata Annotated", 2014). Findings were included in the table if p was less than or equal to 0.05.

Week 1 Lesson Plan

Objectives:

- The students will:
- Introduce themselves to new class members and participate in the icebreaker activity to form teams.
- Create a goal for the number of Ben's Bells to be made.
- Create clay beads.
- Demonstrate an understanding of the project goals through a reflection activity.

Materials Needed:
- Example completed Ben's Bell
- Clay
- Straws
- Chopsticks for designs
- Cups of water
- Kindness puzzle pieces
- 10 laminated copies of Making Ben's Bells Beads sheet
- Sheets of drywall to place completed beads

Lesson Overview:
1. Introduce yourselves – 2 minutes
2. Introduce Ben's Bells Project 10 minutes
3. Icebreaker Activity – 5 minutes
4. Set goal for number of Ben's Bells – 5 minutes
5. Describe /model /make clay beads – 15 minutes
6. One minute reflection – How would you describe the goals of the project to a friend? 5 minutes
7. Clean up procedures – 8 minutes

Procedure for Introducing Ben's Bells Project
1. Explain that you are there to work with their class on a service-learning project. They may have noticed that there are new students in the class. We wanted to have students from two classes join forces to make this project possible.
2. Explain history of Ben's Bells. Show example Ben's Bell and photograph of Ben to the class.
   - A woman from Tucson named Jeannette Mare created the Ben's Bells Project in honor of her two-year-old son who died unexpectedly after an illness in 2002.
   - Jeannette recognized how simple acts of kindness from friends and strangers (e.g. someone letting her into traffic, holding a door, smiling) were what helped her get through such a devastating time in her life. She also recognized that she looked very normal on the outside even though she was in such great pain on the inside. It made her think about how everyone else around her could also be dealing with invisible pain.
   - She wanted to share a message with other about how intentional kindness can have such a powerful and positive influence in the lives of others.
   - Jeanette designed Ben's Bells and opened a ceramics studio where people in Tucson could come and help make the pieces of the bells.
   - By the time one Ben's Bell is complete at least 10 people have contributed to making it.

- Volunteers distribute the finished Ben's Bells in public spaces all over town. A tag is attached that states that the bell is free to take home enjoy and includes the message about spreading intentional kindness.
- Last year, students from San Dimas, Hill Valley, and Main North High School helped to create 300 Ben's Bells that were hung all over the county. Over 100 stories were posted online from people who had found a Ben's Bell in our area. The media covered the story last year and is interested in showing your work to the community this spring.

2. Describe the process for the current project.
- We will be coming once a week for six weeks to work with you to create Ben's Bells. Show timeline.
- Two other high schools are also participating in the project. At the end of the six weeks, we will place all of the completed Ben's Bells in the community for people to find.
- Each time we come to your class, we will work on making the Ben's Bells together, and we will do an activity to further expand our understanding of kindness.

3. Describe the agenda for the day.
- Today, we will start by getting to know each other.
- Then we will create a goal for the number of Ben's Bells we plan to make.
- Finally, we will start making clay beads that are part of the Ben's Bells.
- Questions?

Procedures for Icebreaker Activity – Kindness Puzzle
- Pass out one puzzle piece per student. Use the list of assigned groups.
- Tell the students that their piece of a picture fits with two other students in the class. They need to try to find their match by talking to the other students in the room. Introduce yourself if you don't know the person.
- Once you have found your group, find a table to sit together.
- In the small groups, ask the students if they think being kind is important. Why is it important?

Procedures for Goal Setting and Bead Making
- Tell students that we would like to distribute 300 Ben's Bells again this spring, but each class can decide the number of Ben's Bells they would like to make (40 – 60 total). Have the students help do the math for the number of beads needed. (3 x goal #).
- Distribute a materials card for Week 1 to each team. The students should then collect the needed materials.
- Model making a bead. Show the visuals of the large marble and checker for appropriate bead sizes.
- Remind the students that each Ben's Bell needs three beads and that we will finish making beads next time they work together on the project.
- Tell the students how much time they have to make beads.
- When 5 minutes are remaining to work on the beads ask the students to describe to each other what they would tell a friend are the goals of the project.
- Save 8 minutes for clean up procedures. Set up a routine for clean up (materials should always return to a specific place, cleaning tables, etc.)

Ben's Bells Bead Making

Photos of Ben's Bells and adapted Ben's Bells materials used with permission from Ben's Bells Project founder, Jeannette Mare. www.bensbells.org

Appendix B: Student Free Time Interests and Activities Survey

Name _____
Date _____

Please answer the following questions about your background.

1. What is your grade in school?
___9th ___ 10th ___ 11th ___ 12th

2. What is your gender?
____ Female
____ Male

3. What is your ethnicity?

____ African American
____ Caucasian, European American
____ Hispanic, Latino/Latina
____ Asian American, Pacific Islander
____ Native American
____ Other
____ Prefer not to say

4. Some high school students enjoy helping other students during class activities and other students do not. Put a check by the statement below that best represents how you feel about helping other students during class.

I enjoy helping other students in my classes.

___ Strongly agree   ___ Agree   ___ Disagree   ___ Strongly disagree

High school students participate in a wide variety of activities during their free time. We would like to know more about the free time activities you have participated in during the past month.

Activity	I have participated in this type of activity in the **past month.** (Put an X in the boxes below for all categories that apply)	List the specific activity or activities for each category that you have participated in during the past month. For example, you could write *play guitar* for the Creative / Artistic / Intellectual Activities category.
5. **Creative / Artistic / Intellectual Activities** (drawing, painting, theater, creative writing, playing music, singing, reading, etc.)		
6. **Socializing In-Person Activities** (playing video games with friends, shopping, going to restaurants or coffee shops, going to a youth center to hang out, going to the movies, etc.)		
7. **Socializing Online Activities** (texting, Facebook, Vine, Instagram, etc.)		
8. **Sports or Physical Activities** (watching or playing team or individual sports, running, swimming, bicycling, etc.)		
9. **School Clubs / Organizations** (Spanish, student council, drama, etc.)		
10. **Organizations Outside of School** (church, volunteer organizations, Boy Scouts, 4-H, etc.)		

11. From the activities you listed above, which are your top three activities you like to do in your free time?

      1. _____

      2. _____

      3. _____

12. From your top three activities you listed above, which activity **do you like to talk about** with your friends the most?

      _____

High school students have a wide variety of interests that they enjoy. Please put a check next to **all** of the interest areas you enjoy.

13. Music
    ___ Popular music/Top 40
    ___ Rock music
    ___ Rap music
    ___ Hip hop music
    ___ Dance music
    ___ Country music
    ___ Other _____
    ___ I don't enjoy listening to music.
14. Books
    ___ Non-fiction (biography, autobiography, memoir, history, etc.)
    ___ Fantasy, adventure, paranormal, or science fiction
    ___ Mystery
    ___ Poetry
    ___ Romance
    ___ Other _____
    ___ I don't enjoy reading books.
15. Television
    ___ Comedy sitcoms
    ___ Reality shows
    ___ Drama
    ___ Sports
    ___ Other _____
    ___ I don't enjoy watching television

What is your favorite television show?
_____

16. Video Games
    ___ I enjoy video games
    ___ I don't enjoy video games

What is your favorite video game?
_____

Appendix C: Document Review Form

Student ID _____ Date Collected_____
Date of IEP _____ Age _____

Primary disability classification _____

Secondary disability classification _____

Percentage of Time Spent in General Education Settings_____

Qualifies for Illinois Alternate Assessment Y or N

Social and/or Communication Objectives
_____
_____
_____
_____

Relevant Assessment Data Including Dates
_____
_____
_____
_____

Present Levels of Educational and Functional Performance
_____
_____
_____
_____
_____

Support Needs
_____
_____
_____
_____
_____
_____
_____
_____
_____

Appendix D: Video Recorded Observation Form

School ID _____   Date of observation _____   Observation # _____
Class ID _____   Preservice Teacher IDs _____
SWD ID _____   Peer 1 ID _____ Peer 2 ID _____
Grouped by common interest/activity _____

Time	Initiation (circle 1)	Response (circle all)	Inter-action Type	Adult Proximity	Adult Prompting	Task Type	Common Interest
00:10	I: SWD P1 P2 OP PT CT PP OA	R: SWD P1 P2 OP PT CT PP OA	Social Task	No Prox Prox	No Prom Prom	Co SWD P1 P2 Indep SWD P1 P2 No Task SWD P1 P2	Com Y Com N
00:20	I: SWD P1 P2 OP PT CT PP OA	R: SWD P1 P2 OP PT CT PP OA	Social Task	No Prox Prox	No Prom Prom	Co SWD P1 P2 Indep SWD P1 P2 No Task SWD P1 P2	Com Y Com N
00:30	I: SWD P1 P2 OP PT CT PP OA	R: SWD P1 P2 OP PT CT PP OA	Social Task	No Prox Prox	No Prom Prom	Co SWD P1 P2 Indep SWD P1 P2 No Task SWD P1 P2	Com Y Com N

Key
I: = Any verbal or non-verbal behavior (e.g. speech, gesture, use of AAC, vocalization) with communicative intent that is directed toward another individual who is present when a response has not occurred to a previous initiation for at least 10-seconds.
SWD = Focal student   P1 = Peer 1   P2 = Peer 2   OP = Other peer (non-focal peer)
PT = Preservice teacher CT = Cooperating art teacher   PP = Paraprofessional / Special Education Teacher OA = Other adult
R: = Any verbal or non-verbal behavior (e.g. speech, gesture, use of AAC, vocalization) with communicative intent that serves to acknowledge an initiation or another response that occurs within 10-seconds of the last initiation or response.

C = The interaction continues into the next interval N/A = No interaction occurs during the interval

Social = Interaction not related to the task   Task = Task related interaction

No Prox = An adult (teacher, paraprofessional, other school staff, or a preservice teacher) is located more than 3 feet from the focal student

Prox = An adult (teacher, paraprofessional, other school staff, or a preservice teacher) is located within 3 feet of the focal student.

No Prom: No verbal prompt to interact provided by adults (teacher, paraprofessional, other school staff, or a preservice teacher).

Prom: An adult (teacher, paraprofessional, other school staff, or a preservice teacher) verbally directing a peer or the focal student to interact.

Co = The student is performing or discussing the task collaboratively. Indep = The student is performing the task without interaction with peers or support to/from peers.   No Task = Student is not performing a task

Com Y = The interaction involves the common interest or activity that was the basis of assigning students to the focal group from the student interests survey.

Com N = The interaction does not involve the common interest or activity that was the basis of assigning students to the focal group from the student interests survey.

Appendix E: Live Observation Form

School ID _____   Date of observation _____   Observation # _____
Class ID _____   Preservice Teacher IDs _____
SWD ID _____   Peer 1 ID _____ Peer 2 ID _____

Time	Initiation (only circle 1)	Response (circle all that apply)	Inter-action Type	Adult Physical Proximity	Adult Prompting
00:10					
00:20	I: SWD P1 P2 OP PT CT PP OA	R: SWD P1 P2 OP PT CT PP OA	Social Task	No Prox Prox	No Prom Prom
00:30					
00:40	I: SWD P1 P2 OP PT CT PP OA	R: SWD P1 P2 OP PT CT PP OA	Social Task	No Prox Prox	No Prom Prom
00:50					
1:00	I: SWD P1 P2 OP PT CT PP OA	R: SWD P1 P2 OP PT CT PP OA	Social Task	No Prox Prox	No Prom Prom

Key
I: = Any verbal or non-verbal behavior (e.g. speech, gesture, use of AAC, vocalization) with communicative intent that is directed toward another individual who is present when a response has not occurred to a previous initiation for at least 10-seconds.
SWD = Focal student   P1 = Peer 1   P2 = Peer 2   OP = Other peer (non-focal peer)
PT = Preservice teacher CT = Cooperating art teacher   PP = Paraprofessional / Special Education Teacher OA = Other adult
R: = Any verbal or non-verbal behavior (e.g. speech, gesture, use of AAC, vocalization) with communicative intent that serves to acknowledge an initiation or another response that occurs within 10-seconds of the last initiation or response.
Social = Interaction not related to the task   Task = Task related interaction
No Prox = An adult (teacher, paraprofessional, other school staff, or a preservice teacher) is located more than 3 feet from the focal student
Prox = An adult (teacher, paraprofessional, other school staff, or a preservice teacher) is located within 3 feet of the focal student.
No Prom: No verbal prompt to interact provided by adults (teacher, paraprofessional, other school staff, or a preservice teacher).
Prom: An adult (teacher, paraprofessional, other school staff, or a preservice teacher) verbally directing a peer or the focal student to interact.

Appendix F: Peer Interview Guide

I want to speak with you today because you have been involved in the Ben's Bells service-learning project as part of your art class, and I would like to learn about your experiences working on this project with your group. Is it okay with you if I audio record the interview?

(SWD = focal student with a severe disability. SWD, Peer 1, Peer 2 will be replaced with the students' actual names during the interview)

1. The questions I am going to ask you today are only about your group, which included SWD, Peer 1, and you. What did your group talk about during the project?

2. How did conversations get started in your group?

3. How would you compare the way your group talked to each other to the way other groups in the class talked to each other?

4. What, if anything, did you learn about each other during the project?
   - SWD or Peer 2?
   - What interests do you have in common with SWD and Peer 2?

5. Did having a common interest of _____ affect how you worked together?
   - How so?

6. I want you to think about all of the tasks involved with the Ben's Bells project. How would you describe the way you helped to complete tasks with your group? Let's go through each part of the project.
   - For the class period when your group made beads, how did you help your group complete this task?
   - When your group made centerpieces?
   - Glazed beads?
   - Glazed centerpieces?
   - Put the Ben's Bells together?
   - When your group hung up the Ben's Bells around town?

7. Now I want you to think about how the other students in your group helped to complete tasks during each activity.
   - For the class period when your group made beads, how did Peer 2 and SWD help your group complete this task?
   - When your group made centerpieces? Peer 2, SWD?
   - Glazed beads? Peer 2, SWD?
   - Glazed centerpieces? Peer 2, SWD?
   - Put the Ben's Bells together? Peer 2, SWD?
   - When your group hung up the Ben's Bells around town? Peer 2, SWD?

8. All of the students in class were assigned to work in groups for the whole project. Some groups of students worked together better than others. How would you describe the way SWD, Peer 2, and you worked together as a group?
   - What did each of you do that helped the group work together?
   - You, Peer 2, SWD?

9. There may have been times when your group did not work well together. If that happened, what did you or the other students do that caused this?
   - You, Peer 2, SWD?
   - How did you, Peer 2, or SWD react when this happened?

10. Your class was able to complete tasks to create the Ben's Bells. Some students may not have helped their group complete tasks at times. If this was true for your group, can you describe the ways in which you, Peer 2, or SWD did not help complete tasks?

11. Sometimes your group worked together during the project and other times the students in your group chose to work independently. Can you describe what you did to complete tasks when you were working together?
    - What did Peer 2 do when you worked together as a group?
    - What did SWD do when you worked together as a group?

12. When the students in your group were working independently, can you describe what you did to complete tasks?
    - What did Peer 2 do when worked independently?
    - What did SWD do when worked independently?

13. When did you enjoy working with your group the most?

14. When did you least enjoy working with your group?

15. How did having an adult nearby change the way your group worked?
    - Did they do anything that helped your group work together?
    - Did they do anything that was not helpful for your group?

16. Is there anything else you would like to tell me about the way your group worked together during the project?

Thank you for participating in the interview. You may return to your class.

Appendix G: Art Teacher Interview Guide

I want to speak with you today because your students have been involved in the Ben's Bells service-learning project during your class, and I would like to learn about your views on how one of the groups interacted during the project. Is it okay with you if I audio record the interview?

1. You might have overheard what some of the students talked about during the project. The questions I am going to ask you today are only about Group 1, which included SWD, Peer 1, and Peer 2. What did the students in this group talk about during the project?

2. How did conversations get started in this group?

3. How would you describe the conversational flow of this group?
   • How was this group the same or different compared to other groups in the class?

4. What, if anything, do you think students learned about each other during the project?

5. Did having a common interest of _____ affect how they worked together?
   • How so?

6. I want you to think about all of the tasks involved with the Ben's Bells project. How would you describe the way each student helped to complete tasks within the group? Let's go through each part of the project.
   • For the class period when the group made beads, how did each student help the group complete this task? Peer 1, Peer 2, SWD?
   • When the group made centerpieces?
   • Glazed beads?
   • Glazed centerpieces?
   • Put the Ben's Bells together?
   • When the group hung up the Ben's Bells around town?

7. All of the students in the class were assigned to work in groups for the whole project. Some groups of students worked together better than others. How would you describe the way Peer 1, Peer 2, and SWD worked together as a group?
   • What did each student do that helped the group work together?
   • Peer 1, Peer 2, SWD?

8. There may have been times when the students did not work well together. If that happened, what did students do that caused this?
   • Peer 1, Peer 2, SWD?
   • Can you describe any issues with student behavior that negatively impacted this group working together?
   • What did Peer 1, Peer 2, SWD do during these times?

9. As a whole class, the students were able to complete tasks to create the Ben's Bells. Some students may not have helped their group complete tasks at times. If this was true for this group, can you describe the ways in which Peer 1, Peer 2, or SWD did not help complete tasks?
   - Can you describe any issues with student behavior that prevented the group from completing tasks?

10. Sometimes the group worked collaboratively during the project and other times the students chose to work independently. Can you describe what the students each did when they were working collaboratively to complete tasks?
    - Peer 1, Peer 2, SWD?

11. When the students in the group were working independently from each other, can you describe what the students each did to complete tasks?
    - Peer 1, Peer 2, SWD?

12. How do you think the presence of adults who were near the group affected the way the students worked?

13. What types of adult support do you think helped this group work together?

14. Was there anything that the adults in the rooms did that was not helpful for this group?

15. Is there anything else you would like to tell me about the way the group interacted or worked together during the project?

Thank you for participating in the interview.

Appendix H: Preservice Teacher Focus Group Interview Guide

<u>Focus Group Structure</u>
- Schedule: 30 minutes in length
- Location: A quiet area of the College of Education that has sufficient privacy, such as an empty classroom or conference room
- Refreshments will be provided.
- The chairs will be configured so that all focus group members can see each other.

<u>Focus Group Agenda</u>
1. Welcome
2. Preservice teachers will be invited to get refreshments.
3. Preservice teachers will be directed where to sit through name tents located in front of their seat.
4. Review of agenda
   - Preservice teachers will be given a brief explanation of why they are being asked to participate.
   - Preservice teachers will be told that the session will be audio recorded with their permission.
   - The moderator will review her role and that of the assistant moderator. The moderator will explain that the she will ask questions from the interview guide. She will also clarify responses by asking additional questions (probe questions and clarifying questions, such as "Could you give me an example?"). She will guide the discussion during the focus group.
   - The assistant moderator will not interact with participants during the focus group, but will write notes to aid in interpretation and transcription.
     - Each preservice teacher will be assigned a letter, and each question will be numbered. The assistant will write down the number of the question asked and then the letter of the preservice teacher responding, and the first couple of words spoken. The assistant will also write comments about non-verbal communication throughout the focus group using the same system.
     - If a participant does not agree to being audio recorded, the assistant moderator will be responsible for pausing the recording when that particular participant is speaking and writing down as accurately as possible this participant's responses.
5. Review of ground rules
   - Preservice teachers will be told that everyone will have an opportunity to respond to questions or comments from the others and that there are no right or wrong answers. The participants are encouraged to talk to each other and the moderator during the discussion.
   - Preservice teachers will be told that everyone does not need to agree, but should listen respectfully as other share their perspectives.
   - Preservice teachers will be asked to keep the discussion during the focus group confidential so that everyone feels comfortable participating.
   - Preservice teachers will be asked to have only one person speak at a time to make sure their answer can be understood later on the audio recording.

- Preservice teachers will be asked to turn cell phones to silent during the focus group.

6. Introductions
7. Questions/Answers
8. Wrap up and thank you

Preservice Teacher Focus Group Interview

I want to speak with you today because you have been working together to facilitate the Ben's Bells service-learning project with the students at the high school, and I would like to learn about your views on how one of the groups interacted during the project. Is it okay with all of you if I audio record our discussion?

1. You might have overheard what some of the students talked about during the project. The questions I am going to ask you today are only about Group 1, which included SWD, Peer 1, and Peer 2. What did the students in this group talk about during the project?

2. How did conversations get started in this group?

3. How would you describe the conversational flow of this group?
   - How was this group the same or different compared to other groups in the class?

4. What, if anything, do you think students learned about each other during the project?

5. Did having a common interest of _____ affect how they worked together?
   - How so?

6. I want you to think about all of the tasks involved with the Ben's Bells project. How would you describe the way each student helped to complete tasks within the group? Let's go through each part of the project.
   - For the class period when the group made beads, how did each student help the group complete this task? Peer 1, Peer 2, SWD?
   - When the group made centerpieces?
   - Glazed beads?
   - Glazed centerpieces?
   - Put the Ben's Bells together?
   - When the group hung up the Ben's Bells around town?

7. All of the students in the class were assigned to work in groups for the whole project. Some groups of students worked together better than others. How would you describe the way Peer 1, Peer 2, and SWD worked together as a group?
   - What did each student do that helped the group work together?
   - Peer 1, Peer 2, SWD?

8. There may have been times when the students did not work well together. If that happened, what did students do that caused this?
   - Peer 1, Peer 2, SWD?
   - Can you describe any issues with student behavior that negatively impacted this group working together?
   - What did Peer 1, Peer 2, SWD do during these times?

9. As a whole class, the students were able to complete tasks to create the Ben's Bells. Some students may not have helped their group complete tasks at times. If this was true for this group, can you describe the ways in which Peer 1, Peer 2, or SWD did not help complete tasks?
    - Can you describe any issues with student behavior that prevented the group from completing tasks?

10. Sometimes the group worked collaboratively during the project and other times the students chose to work independently. Can you describe what the students each did when they were working collaboratively to complete tasks?
    - Peer 1, Peer 2, SWD?

11. When the students in the group were working independently from each other, can you describe what the students each did to complete tasks?
    - Peer 1, Peer 2, SWD?

12. How do you think the presence of adults who were near the group affected the way the students worked?

13. What types of adult support do you think helped this group work together?

14. Was there anything that the adults in the rooms did that was not helpful for this group?

15. Is there anything else you would like to tell me about the way the group interacted or worked together during the project?

Thank you for participating in the interview.

Appendix I: Recruitment Scripts and Consent Forms

Script for Recruiting High School Art Teachers

(face-to-face interaction)

Hello. We are interested in having one or two of your classes participate in the Ben's Bells service-learning project again this fall. Students with disabilities will be invited to join your class again for the project, and they will work with the students in your class. The preservice teachers in the U of I service-learning course would need to start the project during the third week of September, and they would work with the students once per week, for six weeks, the same as the previous semester. We would like to conduct a research project during the service-learning project this semester. The research would be focused on studying how students and adults interact during the service-learning project and the roles students take during the project. If you choose to have your class participate in the service-learning project, we would ask you to send home a waiver of consent to all of the parents of your students. We would also ask you to send home and collect parental informed consent forms for some of the students in your participating classes. We would also ask that you provide the students with an interest survey that will take about 10 minutes to complete for the purpose of selecting the groups that the students will work in during the project. We plan to video record and observe in person, one of the groups of students while they participate in the study. You may also be observed or video recorded if you interact with this group of students, thus we would like to invite you to participate in the study so that we may consider your participation in the project. If you decide to participate, we would ask that you also participate in a 30 minute interview at the end of the Ben's Bells service-learning project. Regardless as to whether you or your students choose to participate or not participate in the research study, we would like to implement the Ben's Bells service-learning project with your students. We would provide all of the needed supplies for the project. We hope you are interested in having your students participate again and to consider participating in the research study as well. There is much to learn about service-learning that involves high school students and your participation in the research will help us to gain a better understanding of how students and adults interact during inclusive service-learning. Here is a copy of the consent form (provide 2 copies of the form). Please let me know if you have any questions about the project or the research.

Art Teacher Consent Form

August 25, 2013

You are invited to participate in a research project conducted by Ms. Michelle Bonati and Dr. Stacy Dymond from the Department of Special Education at the University of Illinois at Urbana-Champaign. The purpose of this research project is to learn about peer interactions that occur during the Ben's Bells service-learning project. Your involvement in this study is critical to gaining a greater understanding of how students with and without disabilities interact during service-learning projects, which may lead to improvements in how other schools structure service-learning projects to promote increased learning.

This project will take place between August 2013 and November 2013. As a participant in the study, you will:

- Distribute and collect parent consent forms.
- Be observed and video recorded during service-learning activities in your art class and the community, approximately once per week for six weeks, for a total of 6 hours.
- Participate in one 30-minute interview after the service-learning project that will focus on your students' interactions during service-learning.

One group of students in your class will be video recorded during the project, and you may also be video recorded if you interact with this group. The interview will be audio recorded with your permission. The interview audio recordings will be destroyed after the recording has been transcribed. The interview transcription, video recordings, and any written notes from observations will be stored on a password-protected computer server or in a locked cabinet in the Department of Special Education. These documents will only be accessible to the researchers. There are no anticipated risks to this study greater than normal life. The results of this study may be used for an academic paper, a dissertation, a scholarly report, a journal article, book, and/or a conference presentation. To protect the confidentiality of your information, all participants will be assigned an individual code, and any information recorded about you will use your code and not your name. In any publication or public presentation, pseudonyms will be substituted for any identifying information, and video recordings will not be shown publicly.

Your participation in this project is completely voluntary, and you are free to withdraw from participation at any time and for any reason without penalty. Your choice to participate or not will have no effect on your job or your status or future relationship with the University of Illinois at Urbana-Champaign. You are also free to refuse to answer any questions you do not wish to answer.

If you have any questions about this research project, please contact Ms. Bonati by telephone at 217-722-7623 or by e-mail at bonati1@illinois.edu.

Sincerely,

Michelle Bonati   Dr. Stacy Dymond
Doctoral Student   Associate Professor
217-722-7623   217-244-9763
bonati1@illinois.edu   sdymond@illinois.edu

☐ Yes or ☐ No I have read and understand the above information and voluntarily agree to participate in the research project described above, including collecting consent forms, being video recorded, and participating in an interview. I have been given a copy of this consent form.

☐ Yes or ☐ No I agree to have the interview audio recorded for the purpose of transcription.

Signature   Date

If you have any questions about your rights as a participant in this study or any concerns or complaints, please contact the University of Illinois Institutional Review Board at 217-333-2670 (collect calls will be accepted if you identify yourself as a research participant) or via email at irb@illinois.edu

Parent Consent Form – Student with a Disability

August 25, 2013

This fall, we would like your child to participate in an inclusive service-learning project called Ben's Bells. During art classes, students will work with University of Illinois preservice teachers to create ceramic wind chimes called Ben's Bells. These wind chimes will be distributed throughout the community for individuals to randomly find, take home, and be inspired to perform acts of kindness. See www.bensbells.org for more information about the project. This is a great opportunity for your child to develop new skills and promote friendships with their peers. The students will also gain an understanding of the mission of the project, which is to promote intentional kindness. The students will work on the project during one class period per week, for six weeks, beginning the week of September 16th, 2013.

Your child is also invited to participate in a research project conducted by Ms. Michelle Bonati and Dr. Stacy Dymond from the Department of Special Education at the University of Illinois at Urbana-Champaign. The purpose of this research project is to learn about peer interactions that occur during the Ben's Bells service-learning project. Your child's involvement in this study is critical to gaining a greater understanding of how students with and without disabilities interact during service-learning projects, which may lead to improvements in how other schools structure service-learning projects to promote increased learning.

This project will take place between August and November 2013. As a participant in the study:

- Your child will be asked about their preferred free time activities and interests for the purpose of assigning your child to a group of students during the project
- We will review a copy of his/her IEP to obtain information about his/her disability, educational background, and support needs.
- Your child will be observed and video recorded during service-learning activities in the high school art classroom and in the community, approximately once per week, for six weeks for a total of 6 hours

Any written notes and video recordings from observations and IEP reviews will be stored on a password-protected computer server or in a locked cabinet in the Department of Special Education. These documents will only be accessible to the researchers. Video recordings will be used for research analysis only, and will not be disseminated publicly. There are no anticipated risks to this study greater than normal life. The results of this study may be used for an academic paper, a dissertation, a scholarly report, a journal article, book, and/or a conference presentation. To protect the confidentiality of your child's information, all participants will be assigned an individual code, and any information recorded about your child will use his or her code and not your child's name. In any publication or public presentation, pseudonyms will be substituted for any identifying information.

Your child's participation in this project is completely voluntary, and you are free to withdraw your child from participation at any time and for any reason without penalty. In addition to your permission, your child will also be asked if he or she would like to take part in this research project. Only those children who want to participate will do so, and any child may stop taking part at any time. The choice to participate or not will not impact your child's grades or status at school. Your child's teacher and principal are aware of this research project and have agreed to allow the research project to take place.

If you have any questions about this research project, please contact Ms. Bonati by telephone at 217-722-7623 or by e-mail at bonati1@illinois.edu.

Sincerely,

Michelle Bonati   Dr. Stacy Dymond
Doctoral Student   Associate Professor
217-722-7623   217-244-9763
bonati1@illinois.edu   sdymond@illinois.edu

I have read and understand the above consent form and voluntarily agree to my child's participation in this study, including allowing the researchers to review my child's IEP and video record my child during the Ben's Bells service-learning project. Please return the form to your child's teacher by August 30th, 2013.

☐ Yes or ☐ No I give permission for my child _____ (name of child) to participate in the research project described above.

_____Date _____Parent's signature

If you have any questions about your child's rights as a participant in this study or any concerns or complaints, please contact the University of Illinois Institutional Review Board at 217-333-2670 (collect calls will be accepted if you identify yourself as a research participant) or via email at irb@illinois.edu

Script for Alteration of Informed Consent for the Students with Severe Disabilities

(face-to-face interaction)

Hi. My name is Michelle. I would like to record you with my video camera while you work today in art class (point to the video camera). Is it okay with you if I video record you and take some notes? (Wait for response that can be verbal or non-verbal. If there is no response, ask one more time and wait for response. Confirm affirmative or negative nonverbal response with school staff.)

Script for Recruiting Peers

(face-to-face interaction)

Hi. I'm a student at the University of Illinois, and I am interested in having you participate in research that will occur during the Ben's Bells service-learning project in your art class. Some students from another class will be joining your class for the project. All of the students in the class will be participating in small groups during the service-learning project. I would like to video record and take notes in person on one of the groups of students during the service-learning project. If you choose to participate, you will be included in the group that would be video recorded. I would also ask to use the answers you provided on the free time interest survey your teacher gave you in class. Finally, I would ask you to participate in a 15-minute interview at the end of the service-learning project. Your participation in the research project is completely voluntary and will not have any impact on your class grades. I have two forms that you will need to return to your teacher. One of these forms needs to be completed by your parents, and the other form you will complete. Please let me know if you have any questions.

Parent Consent Form – Peers

August 25, 2013

As part your child's art class, he or she is participating in a service-learning project called Ben's Bells. Students will work with University of Illinois preservice teachers to create ceramic wind chimes called Ben's Bells. These wind chimes will be distributed throughout the community for individuals to randomly find, take home, and be inspired to perform acts of kindness. See www.bensbells.org for more information about the project. The students will develop their art skills and also gain an understanding of the mission of the project, which is to promote intentional kindness. The students will work on the project during one class period per week, for six weeks, beginning the week of September 16th, 2013.

As part of this service-learning project, your child is invited to participate in a research study conducted by Ms. Michelle Bonati and Dr. Stacy Dymond from the Department of Special Education at the University of Illinois at Urbana-Champaign. The purpose of this research project is to learn about peer interactions that occur during the Ben's Bells service-learning project. Your child's involvement in this study is critical to gaining a greater understanding of how students interact during service-learning projects, which may lead to improvements in how other schools structure service-learning projects to promote increased learning.

This project will take place between August and November 2013. As a participant in the study:

- We will collect your child's responses from a free time interest survey that the art teacher distributed to students for the purpose of assigning students to small groups for the service-learning project
- Your child will be observed and video recorded during service-learning activities in his or her art classroom and in the community, approximately once per week for six weeks for a total of 6 hours
- Your child will be participate in a 15-minute interview at the end of the project regarding their perceptions of peer interactions during the service-learning project

Any written notes and video recordings from observations will be stored on a password-protected computer server or in a locked cabinet in the Department of Special Education. These documents will only be accessible to project personnel. Video recordings will be used for research analysis only, and will not be disseminated publicly. There are no anticipated risks to this study greater than normal life. The results of this study may be used for an academic paper, a dissertation, a scholarly report, a journal article, book, and/or a conference presentation. To protect the confidentiality of your child's information, all participants will be assigned an individual code, and any information recorded about your child will use his or her code and not your child's name. In any publication or public presentation, pseudonyms will be substituted for any identifying information.

Your child's participation in this project is completely voluntary, and you are free to withdraw your child from participation at any time and for any reason without penalty. In addition to your permission, your child will also be asked if he or she would like to take part in this research project. Only those children who want to participate will do so, and any child may stop taking part at any time. The choice to participate or not will not impact your child's grades or status at school. Your child's teacher and principal are aware of this research project and have agreed to allow the research project to take place.

If you have any questions about this research project, please contact Ms. Bonati by telephone at 217-722-7623 or by e-mail at bonati1@illinois.edu.

Sincerely,

Michelle Bonati   Dr. Stacy Dymond
Doctoral Student   Associate Professor
217-722-7623   217-244-9763
bonati1@illinois.edu   sdymond@illinois.edu

_____

I have read and understand the above consent form and voluntarily agree to my child's participation in this study, including allowing the researchers to collect my child's interest survey data, interview my child, and video record my child during the Ben's Bells service-learning project. Please return the form to your child's teacher by August 30th, 2013.

☐ Yes or ☐ No I give permission for my child _____ (name of child) to participate in the research project described above.

_____Date _____Parent's signature

If you have any questions about your child's rights as a participant in this study or any concerns or complaints, please contact the University of Illinois Institutional Review Board at 217-333-2670 (collect calls will be accepted if you identify yourself as a research participant) or via email at irb@illinois.edu

High School Student Assent Form

August 25, 2013

Hi! We are here from the University of Illinois to do a research project on peer interactions during service-learning. At the end of the project we hope to have a greater understanding of how high school students interact in groups during service-learning. We would like to include you in this project.

If you choose to participate, you will be asked to:

- Allow us to collect your responses to the free time interests and activities survey your Art Teacher distributed
- Be observed and video recorded during service-learning activities in your art class and the community, once per week for six weeks, for a total of about 6 hours
- Participate in an interview after the service-learning project about your experiences interacting with peers and adults during the service-learning project that will take approximately 15 minutes

Your participation in this project is voluntary. This means that you can decide whether or not you want to participate in this project. If you want to stop the project at any time, you can stop. All information you write on the questionnaire, say in the interview, and video recordings will be kept private and secure. To do this, we will assign a secret code to your name. Any information that you share will be recorded using this code and not your name. This will keep your information private. The video recordings will only be used for the research project and will not be shown in public.

This project will not go on your school record or count toward your grades. If you decide not to do this project, that is okay.

If you decide to participate in this project, please sign on the line below and return the form to your art teacher. You can ask your teacher for a copy of this form if you would like one. If you have any questions, you can ask your teacher or Ms. Bonati when she comes to your class.

Thank you,

Michelle Bonati   Dr. Stacy Dymond
Doctoral Student   Associate Professor
217-722-7623   217-244-9763
bonati1@illinois.edu   sdymond@illinois.edu

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☐ Yes or ☐ No I have read and understand the above information and voluntarily agree to participate in the research project described above, including collecting your student interest survey responses, being video recording, and participating in an interview. I have been given a copy of this consent form.

☐ Yes or ☐ No I agree to have the interview audio recorded for the purpose of transcription.

_____
Print name

_____
Signature   Date

If you have any questions about your rights as a participant in this study or any concerns or complaints, please contact the University of Illinois Institutional Review Board at 217-333-2670 (collect calls will be accepted if you identify yourself as a research participant) or via email at irb@illinois.edu

Parent Information Letter

August 30, 2013

Dear Parent or Guardian,

As part your child's art class, he or she is participating in a service-learning project called Ben's Bells. Students will work with University of Illinois preservice teachers to create ceramic wind chimes called Ben's Bells. These wind chimes will be distributed throughout the community for individuals to randomly find, take home, and be inspired to perform acts of kindness. See www.bensbells.org for more information about the project. The students will develop their art skills and also gain an understanding of the mission of the project, which is to promote intentional kindness. The students will work on the project during one class period per week, for six weeks, beginning the week of September 16th, 2013.

During the Ben's Bells service-learning project, Dr. Stacy Dymond and Michelle Bonati from the College of Education at the University of Illinois would like to include the students from your child's art class in a research project. The purpose of this research project is to learn about peer interactions that occur during the Ben's Bells service-learning project. Your child's involvement in this study is critical to gaining a greater understanding of how students interact during service-learning projects, which may lead to improvements in how other schools structure service-learning projects to promote increased learning.

This project will take place between September and November 2013. During the service-learning project, we will be video recording one group of students that does NOT include your child. This will occur once per week, for a total of 6 hours. As a participant in this study, your child may be video-recorded or observed if he/she interacts with any of the students in the group that is being video-recorded. The video camera will be positioned to avoid video recording other children who are not part of that group. Any written notes and video recordings from observations will be stored on a password-protected computer server or in a locked cabinet in the College of Education. These documents will only be accessible to the researchers. Video recordings will be used for research analysis only, and will not be disseminated publicly. There are no anticipated risks to this study greater than normal life. The results of this study may be used for an academic paper, a dissertation, a scholarly report, a journal article, book, and/or a conference presentation. In any publication or public presentation, pseudonyms will be substituted for any identifying information.

Your child's participation in this research project is completely voluntary, and you are free to withdraw your child from participation at any time and for any reason without penalty. The choice to participate or not will not impact your child's grades or status at school. Your child's teacher and principal are aware of this research project and have agreed to allow the research project to take place.

If you **DO NOT** want your child to participate in this research project, please return this form with your child's name and your signature to your child's art teacher or the school office. You may also call the researchers or your child's art teacher to inform them that you **DO NOT** want your child to participate. If you have any questions about this research project, please contact Ms. Bonati by telephone at 217-722-7623 or by e-mail at bonati1@illinois.edu.

Sincerely,

Michelle Bonati   Dr. Stacy Dymond
Doctoral Student   Associate Professor
217-722-7623   217-244-9763
bonati1@illinois.edu   sdymond@illinois.edu

I **DO NOT** want my child to participate in this research study.

_____   _____
Child's name   Parent's signature   Date

If you have any questions about your child's rights as a participant in this study or any concerns or complaints, please contact the University of Illinois Institutional Review Board at 217-333-2670 (collect calls will be accepted if you identify yourself as a research participant) or via email at irb@illinois.edu

Student Information Letter
August 30, 2013

Hi!

As part your art class, you will be participating in a service-learning project called Ben's Bells. You and your classmates will work with students from the University of Illinois to create ceramic wind chimes called Ben's Bells. These wind chimes will be distributed throughout the community for individuals to randomly find, take home, and be inspired to perform acts of kindness. See www.bensbells.org for more information about the project. By participating in the Ben's Bells service-learning project, you will develop art skills and also gain an understanding of the mission of the project, which is to promote intentional kindness. Your art class will work on the project during one class period per week, for six weeks, beginning the week of September 16th, 2013.

During the Ben's Bells service-learning project, Dr. Stacy Dymond and Michelle Bonati from University of Illinois would like to include the students from your art class in a research project. At the end of the project, we hope to have a greater understanding of how high school students interact in groups during service-learning.

This research project will take place between September and November 2013. During the service-learning project, we will be video recording one group of students in your class that does NOT include you. This will occur once per week, for six weeks (total of 6 hours. You may be video-recorded or observed if you talk to any of the students in the group that is being video-recorded. The video camera will be positioned to avoid video recording other students who are not part of that group.

Your participation in this research project is voluntary. This means that you can decide whether or not you want to participate in this research project. If you want to stop participating in the research project at any time, you can stop. This research project will not go on your school record or count toward your grades. If you decide not to do this research project, that is okay.

All video recordings will be kept private and secure. The video recordings will only be used for the research project and will not be shown in public.

If you **DO NOT** want to participate in this research project, please return this form with your name and your signature to your art teacher or the school office. You may also call the researchers or tell your art teacher in person to inform them that you **DO NOT** want to participate. If you have any questions about this research project, please contact Ms. Bonati by telephone at 217-722-7623 or by e-mail at bonati1@illinois.edu.

Sincerely,

Michelle Bonati   Dr. Stacy Dymond
Doctoral Student   Associate Professor
217-722-7623   217-244-9763
bonati1@illinois.edu   sdymond@illinois.edu

I **DO NOT** want to participate in this research study.

_____   _____
Print your name   Your signature   Date

If you have any questions about your rights as a participant in this study or any concerns or complaints, please contact the University of Illinois Institutional Review Board at 217-333-2670 (collect calls will be accepted if you identify yourself as a research participant) or via email at irb@illinois.edu

Script for Recruiting Paraprofessionals and Special Education Teachers

(face-to-face interaction)

Hello. I'm a graduate student at the University of Illinois. I understand you will be working in the art classroom during the Ben's Bells service-learning project that will occur on (day of the week) for six weeks. I plan to conduct a research project during the service-learning activities in the art class. The research would be focused on studying how students and adults interact during the service-learning project and the roles students take during the project. We plan to video record and observe in person, one of the groups of students while they participate in the project. You may also be observed or video recorded if you interact with this group of students. If you choose to participate in the research project, you would provide us with permission to include your data we collect regarding interactions in the research study. Your choice to participate is completely voluntary and will not have an impact on your job status. Here is a copy of the consent form (provide 2 copies of the form). Please let me know if you have any questions about the project or the research.

Paraprofessional and Special Education Teacher Consent Form
August 25, 2013

You are invited to participate in a research project conducted by Ms. Michelle Bonati and Dr. Stacy Dymond from the Department of Special Education at the University of Illinois at Urbana-Champaign. The purpose of this research project is to learn about peer interactions that occur during the Ben's Bells service-learning project. Your involvement in this study is critical to gaining a greater understanding of how students with and without disabilities interact during service-learning projects, which may lead to improvements in how other schools structure service-learning projects to promote increased learning.

This project will take place between August 2013 and November 2013. As a participant in the study, you will:

- Be observed and video recorded during service-learning activities in the art classroom and in the community, approximately once per week for six weeks, for a total of 6 hours.

One group of students in the class will be video recorded during the project, and you may also be video recorded if you interact with this group. The video recordings and any written notes from observations will be stored on a password-protected computer server or in a locked cabinet in the Department of Special Education. These documents will only be accessible to the researchers. There are no anticipated risks to this study greater than normal life. The results of this study may be used for an academic paper, a dissertation, a scholarly report, a journal article, book, and/or a conference presentation. To protect the confidentiality of your information, all participants will be assigned an individual code, and any information recorded about you will use your code and not your name. In any publication or public presentation, pseudonyms will be substituted for any identifying information, and video recordings will not be shown publicly.

Your participation in this project is completely voluntary, and you are free to withdraw from participation at any time and for any reason without penalty. Your choice to participate or not will have no effect on your job or your status or future relationship with the University of Illinois at Urbana-Champaign. You are also free to refuse to answer any questions you do not wish to answer.

If you have any questions about this research project, please contact Ms. Bonati by telephone at 217-722-7623 or by e-mail at bonati1@illinois.edu.

Sincerely,

Michelle Bonati   Dr. Stacy Dymond
Doctoral Student   Associate Professor
217-722-7623   217-244-9763
bonati1@illinois.edu   sdymond@illinois.edu

☐ Yes or ☐ No I have read and understand the above information and voluntarily agree to participate in the research project described above, including being video recorded. I have been given a copy of this consent form.

_____

Signature   Date

If you have any questions about your rights as a participant in this study or any concerns or complaints, please contact the University of Illinois Institutional Review Board at 217-333-2670 (collect calls will be accepted if you identify yourself as a research participant) or via email at irb@illinois.edu

Script for Recruiting Preservice Teachers

(face-to-face interaction)

Hello. My name is Michelle Bonati, and I am a doctoral student in the Department of Special Education. I am conducting a research study about peer and adult interactions during the service-learning project that you will be facilitating for this course. I plan to video record a peer group of high school students and conduct live observations during the project in each of the art classes. If you choose to participate in the research project, you may also be video recorded or included in the live observations. I will also ask you to participate in a 30 minute small group interview at the end of the project. The Ben's Bells service-learning project is a required activity for the course. However, your choice to participate in the research is completely voluntary, and the course instructors, including Dr. Stacy Dymond, will not be told who agreed to participate in the research until after grades have been submitted. There is much to learn about service-learning that involves high school students, and this study might help us gain a greater understanding of how to improve implementing projects that involve students with and without disabilities. Your participation will also help us to gain a better understanding of how students and adults interact during inclusive service-learning. Please let me know if you have any questions about the research.

Preservice Teacher Consent Form

August 25, 2013

You are invited to participate in a research project conducted by Ms. Michelle Bonati and Dr. Stacy Dymond from the Department of Special Education at the University of Illinois at Urbana-Champaign. The purpose of this research project is to learn about peer interactions that occur during the Ben's Bells service-learning project. Your involvement in this study is critical to gaining a greater understanding of how students with and without disabilities interact during service-learning projects, which may lead to improvements in how other schools structure service-learning projects to promote increased learning.

This project will take place between August 2013 and November 2013. As a participant in the study, you will:

- Be observed and video recorded during service-learning activities in a high school art class and the community, approximately once per week for six weeks, for a total of 6 hours
- Participate in one 30-minute interview after the service-learning project that will focus on students' interactions during service learning

One group of high school students in the class will be video recorded during the project, and you will also be video recorded while interacting with this group. The small group interview will be audio recorded with your permission. The audio recordings will be destroyed after the recording has been transcribed. The interview transcription, video recordings, and any written notes from observations will be stored on a password-protected computer server or in a locked cabinet in the Department of Special Education. These documents will only be accessible to the researchers. There are no anticipated risks to this study greater than normal life. The results of this study may be used for an academic paper, a dissertation, a scholarly report, a journal article, book, and/or a conference presentation. To protect the confidentiality of your information, all participants will be assigned an individual code, and any information recorded about you will use your code and not your name. In any publication or public presentation, pseudonyms will be substituted for any identifying information, and video recordings will not be shown publicly.

Participation in the Ben's Bells service-learning project is part of your coursework, but your participation in this research project is completely voluntary, and you may choose to opt out of the research study. The decision to participate, decline, or withdraw from participation will have no effect on your grades at, status at, or future relations with the University of Illinois, and you are free to withdraw at any time and for any reason without penalty. Dr. Stacy Dymond will not know who chooses to participate in the research project until final grades for the course have been assigned. You are also free to refuse to answer any questions you do not wish to answer.

If you have any questions about this research project, please contact Ms. Bonati by telephone at 217-722-7623 or by e-mail at bonati1@illinois.edu.

Sincerely,

Michelle Bonati   Dr. Stacy Dymond
Doctoral Student   Associate Professor
217-722-7623   217-244-9763
bonati1@illinois.edu   sdymond@illinois.edu

☐ Yes or ☐ No I have read and understand the above information and voluntarily agree to participate in the research project described above, including being video recorded during service-learning activities and participating in a small group interview. I have been given a copy of this consent form.

☐ Yes or ☐ No I agree to have the interview audio recorded for the purpose of transcription.

Print name: _____

_____
Signature   Date

If you have any questions about your rights as a participant in this study or any concerns or complaints, please contact the University of Illinois Institutional Review Board at 217-333-2670 (collect calls will be accepted if you identify yourself as a research participant) or via email at irb@illinois.edu