Examining Children's Attitudes Towards Disability After One Year in a Reverse Integrated Setting

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ABSTRACT

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While there is research on the topic of children with disabilities and their experiences with inclusion, there is a paucity of research in the area of typically developing children's attitudes and experiences with inclusion. Previous research in the area examined either the attitudes of typically developing children towards children with disabilities, or the friendship status of children with disabilities. Though these two areas, attitude formation and actual behaviour, are likely related, they are infrequently investigated concurrently to see if attitudes towards disability are reflected in their social play with children with disabilities. The following thesis evaluated a unique reverse integration (RI) program, which has been in effect for many years but has yet to be systematically analyzed, where a few pre-selected typically developing children were integrated into a special education classroom, for the benefit of both children with and without disabilities. The goal of the program is for typically developing children to learn acceptance of difference, and form friendships with children who are unlike themselves. This research project explored the developing attitudes of typically developing elementary school children towards children with disabilities throughout one year in the program *(N* = 8) through in depth interviews, field notes, a focus group, a parental questionnaire, observations and an acceptance towards disability measure. Results showed that typically developing children's attitudes and conceptualizations about disability changed after one year in a reverse integrated setting. Additionally, their self-reports about their attitudes towards disability predicted their actual social interactions with their peers with disabilities.

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Educational inclusion has been shown to offer numerous benefits to children with disabilities (Burnstein, Sears, Wilcoxen, Cabeloo & Spagna, 2004). One possible benefit of inclusion is the acceptance of individuals with disabilities by typically developing peers (Guralnick, 1990). While there has been a great deal of research devoted to the affects of inclusion on children with special needs, what are often left unexamined are the affects of inclusion on typically developing children. There is evidence that positive experiences in inclusive school programs can support the development of positive attitudes toward people with disabilities in typically developing children (Stoneman, 1993), however research in this area is limited. Children with special needs are at a higher risk of being teased and socially outcast than are typically developing children. Thus, it is imperative that researchers try to understand how typically developing children's attitudes towards disability are formed, and how these attitudes influence their interactions with children with disabilities (Stainback & Stainback, 1990).

While educational inclusion is ideal for children with disabilities, it is not always available, especially for children with severe disabilities who require services that many inclusive schools do not have. Reverse integration (RI) is an option for special education schools, which brings a few pre-selected typically developing children into special education classrooms, for the benefit of both the children with disabilities and the typically developing children. Typically developing children in a reverse integrated program can provide peer interaction opportunities to children with special needs, while the goal is for typically developing children to benefit from the program as well, and to learn about about people who are different from themselves. There is positive anecdotal evidence on the affects of the reverse integration program suggesting that children who are integrated with other children with disabilities will learn to be more understanding of differences throughout one year spent in the program, however it has not been investigated systematically.

Previous researchers have suggested that children's attitudes about disability are multi-dimensional, and are thought to consist of affective, behavioral and cognitive components (Ajzen & Fishbein, 1980; Vignes, Coley, Grandjean, Godau, & Arnaud, 2008). The affective component is comprised of emotions and feelings. The behavioural component can be either actual or intended behaviours. Finally, the cognitive component indicates children's knowledge and beliefs. It is important to explore all dimensions of attitude towards disability, and how they interact, in order to fully understand the make-up of children's beliefs and to promote positive social interactions between disabled and non-disabled peers. Likewise, it is important to consider how the cognitive, affective and behavioural components of attitude formation interact and if there is an observable relationship between children's attitudes and towards disability, and their actual social interactions with children with disabilities (Ajzen & Madden, 1986).

Cognitive Component of Attitude Formation

Children's attitudes towards disability are multi-faceted. Attitude formation often stems from knowledge, or a lack thereof. According to Shapiro and Margolis (1988), knowledge and awareness concerning disability issues are key features in changing negative attitudes towards children with disabilities. Allowing children to ask questions about disability, and providing them with knowledge about their peers with a disability, can help them to make sense of the perceived differences. For instance, learning that a child in a wheelchair can still play basketball may help typically developing children to understand that children with a physical disability are much like themselves. Maras and Brown (1996) also emphasized the importance of providing knowledge to children about disability. Children’s perceptions of disability have not been addressed in depth. Maras and Brown (1996) found that the concept of disability is poorly distinguished or understood by children at the elementary school level. Diamond, Hestenes, Carpenter and Inneds (1997), in evaluating the attitudes of preschoolers, found that their knowledge about disability contributed to explaining the variance of social acceptance within their inclusive preschool classrooms. Thus children’s cognitive attitudes seem to be linked to their behavioural attitudes.

Some studies have looked at children’s attitudes towards specific subgroups of disabilities. For example, Maras and Brown (1996) considered children’s knowledge and attitudes about hearing impairments and visual impairments as well as learning and physical disabilities. Similarly, Lewis (1995) examined children’s understanding and acceptance of people with severe learning difficulties. Additionally, Diamond, Hestenes, Carpenter and Innes (1997) addressed young children’s knowledge of physical disabilities, hearing impairments and visual impairments. These studies investigated how children conceptualized different subgroups of disabilities and looked at their attitudes towards each group. However, these studies relied on preconceived notions of subgroups of knowledge. That is, the researchers used operational definitions of each of these subgroups of disabilities when talking to the children. What is of interest is children’s own perceptions and definitions of subgroups of disabilities (Magiati, Dockrell, & Logotheti, 2002).

There is evidence to suggest that younger elementary school children have poor schemas relating to disability. More specifically, children in grades five and six have a more advanced understanding of disability than their younger peers, particularly their knowledge of intellectual disabilities (Maras & Brown, 1996). This understanding is thought to be a result of conceptual changes and increased social experiences. There is research to suggest that children's rudimentary understanding about disability is made up of physical indicators of disability (Magiati, Dockrell, & Logotheti, 2002). The researchers investigated eight to eleven-year-olds' representations of different disabilities. They found that external markers such as a wheel chair, or a walking cane, were indicators of a physical disability, and were easier to conceptualize for the children than an intellectual disability. This might be because the concept of a physical disability is easier to grasp, whereas the concept of an intellectual disability, or a learning disability is fuzzier. The researchers also found that older children in grades 5 and 6 were able to provide richer descriptions of intellectual disabilities than younger children were (Magiati, Dockrell, & Logotheti, 2002). Despite the knowledge that developing children's representations of disability contribute to their attitudes about disability and children's interactions with their disabled peers, there is a marked gap in the literature on how children interpret and understand the range of disabilities that exist. It is unclear what factors govern the attitudes and behaviours of typically developing children in relation to their peers with special needs (Maras & Brown, 1996). Thus, it is important to consider several factors when examining children's understanding of disability: age difference, developmental changes in attitudes and knowledge, the wider social context that the child has been exposed to, and their previous contact with persons with disabilities.

Affective Component of Attitude Formation

There are many theories explaining attitude formation in children. While many definitions of attitude exist, one that is sometimes used in the literature states that, “attitudes are acquired behavioural dispositions that contain residues of experience of such a nature as to guide, bias, or otherwise influence later behaviour” (Vargas, 2004, p. 276). Attitude formation is based on experience in three areas: affective, cognitive and behavioural. Children’s conceptualization of, and attitudes towards disability are formed at a young age. Bandura (1986) suggested that attitudes are developed through observation and imitation of others. At first children observe and imitate parents and siblings, however as they age these attitudes are transferred and mediated by peers and teachers at school. Therefore, children look to others, both at home and in school, in order to construct their attitudes and understanding of what it means to have a disability.

Unfortunately, young children are generally astute and pick up on the most subtle of injustices in society and at a smaller level, the classroom. When people with disabilities are treated as though they are less capable than other others, both in their everyday surroundings and in the classroom, children learn negative attitudes towards disability. These attitudes often translate to behaviours. Research indicates that children with physical and intellectual disabilities still face negative attitudes and prejudice from their peers. Llewellyn (1995), found that children with physical disabilities who attended inclusive schools were often bullied. While inclusive schools offer wonderful opportunities for social integration, they also leave room for social rejection. This may due to many variables: children’s lack of knowledge about disability, lack of teacher facilitation between children with and without disabilities, negative attitudes formed by parents or society, or discomfort with “difference.” It is important to both understand children’s attitudes about disability and to learn how these attitudes can be altered (Tregaskis, 2000).

Multi-Component Models of Attitude Formation

There is some debate in the literature about how children’s beliefs reflect their attitudes. The multi-component model of attitude formation (Eagly & Chaiken, 1993), posits that attitude formation is made up of complex systems consisting of beliefs or attitudes about a person (cognitive), feelings towards a person (affect), and behavioural tendencies towards a person(behavioural intention or actions). There continues to be a need to investigate the importance of all three components in attitude formation as well as the inter-relationship between them (Haddock & Huskinson, 2004). If children’s beliefs and feelings towards people with disabilities manifest into actions, then attitude change, both societal and individual, may be a successful way to hinder bullying and even promote peer friendships between children with and without disabilities. Some researchers have looked into the relationship between the cognitive, affective and behavioural aspects of attitude formation regarding disability, in children (Ajzen & Fishbein, 1980).

Nowicki (2005) examined the attitudes of elementary school children towards their peers with disabilities (both physical and intellectual) on a cognitive, affective and behavioural level. Her findings put forward the idea that affective and behavioural responses are more highly related than are cognitive responses. She did, however, reflect upon her method of collecting cognitive responses, and admitted that she did not give the children an opportunity to speak about what they may have known about different kinds of disabilities (Nowicki, 2005). A more in-depth understanding of the cognitive contributions of attitude formation through a qualitative investigation might provide further insight into attitude formation.

Furthermore, the multi-component theory of attitude formation was put forward by Ajzen and Fishbein (1980). They coined the term *Theory of Reasoned Action*, which was later, revised as *Theory of Planned Behaviour* (Ajzen & Madden, 1986). The terms *reasoned* or *planned* are used to describe the reasoning process that people go through before enacting a specific behaviour. Thus, children's attitudes to interact with a child with a disability will depend on what children know and understand about disability, and these attitudes, paired with the subjective norm, will predict children's behavioural intentions to interact with their peers with disabilities (Laws & Kelly, 2005). The Theory of Planned Behaviour is comprised of three components that predict behaviour: attitude toward the behaviour, subjective norm, and perceived behavioural control. Attitude toward the behaviour is the personal positive or negative evaluation of performing the behaviour and the subjective norm is the normative factor, which reflects social pressures and stereotypes. Perceived behavioural control is the belief of how easy or difficult the behaviour is perceived to be. All of these components contribute to the mediating factor which is the behavioural intention and which will predict actual behaviour. A behavioural intention is motivation and eventual decision to perform behaviours. Ajzen and Madden

(1986) emphasized the importance of attitudes towards behaviours rather than towards people. In sum, children’s interactions with children reflect their desire to carry out the behaviour rather than their feelings towards the person.

Roberts and Smith (1999) explored children’s attitudes towards disability and their friendships with disabled children using the Theory of Planned Behaviour. The study took place in a classroom that included a child with cerebral palsy. As well as measuring attitudes, behavioural intentions and perceived control, their actual interactions with the child with a disability were observed. Perceived control predicted their behavioural interactions which predicted their actual actions. Thus, they found that behavioural intentions predict actual social interactions initiated by typically developing children towards a child with a disability. They used positive physical and verbal interactions directed towards the child with a disability as an indicator of positive social interactions. Thus children’s self-reported intentions of how they said they would interact with their peer with a disability was the best predictor of their actual behaviours. This study was one of the first to use this theory to predict children’s actions. This study mostly relied on quantitative data. Further analysis through an interview would be interesting to further delve into the depths of the relationships that were formed.

The Subjective Norm

One important aspect of the Theory of Planned Behaviour is the subjective norm. The subjective norm reflects society’s social pressures and stereotypes concerning disability. This aspect of the model ultimately contributes to how children form their behavioural intentions. Understanding the many facets contributing to the subjective norm is not a simple process. Children learn attitudes from their parents and teachers (Gollnick & Chinn, 2002), through the media, and through contact with people with special needs (Diamond, Hestenes, Carpenter, & Inneds, 1997). To understand how attitudes are formed also requires the consideration of wider social and cultural factors in the context that the child grows up. The social model of disability explains that people's conceptions about disability are socially constructed. The model proposes that children's understanding of difference reflects their surrounding environment, which sets limits and restricts people with a disability (Reeve, 2002). One of these ecological systems is the education system. Classroom environments are indeed a "culture" of their own that represents values, roles and responsibilities (Otis-Wilborn, 1995). In order to alter children's attitudes and knowledge about disability in a positive way involves pointing out and understanding issues or prejudice and exclusion. Social awareness of disability is imperative because it can broaden children's schemas and experiences through knowledge (Magiati, Dockrell, & Logotheti, 2002). Further, it is important to teach children that many aspects of disability are socially constructed.

Disability Awareness Programs

There have been different approaches used in various school settings to educate and change children's attitudes about disability. In schools without children with disabilities, it is important that children are given the exposure to disability. Various mediums of exposure have been attempted. Eichinger, Rizzo and Sirotnik (1992) showed films to children in a non-inclusive school presenting a positive image of people and children with disabilities. Pfeiffer (1989) educated elementary school children about disability by providing them with accurate information through a presentation. Additionally, some research has used storybooks to teach children about disabilities (Favazza et al., 1997; Cameron & Rutland, 2006). Cameron and Rutland (2006) implemented a program where teachers read several stories to children that portrayed friendships between children with and without disabilities (ages 5-7 years). The goal of the intervention was to change young children's attitudes towards disability. The intervention occurred once a week for six weeks and was followed each time by a classroom discussion of the story. The researchers measured the children's attitudes towards disability and understanding of stereotypes before and after the intervention and found that children's attitudes towards disability had improved after the intervention. All of the aforementioned studies used one method to educate or change children's attitudes about disability. Likewise, all of these studies looked at children's affective attitudes or cognitive beliefs about disability. None of them looked at the behavioural results of the interventions. Thus, while children's self-reported attitudes towards disability improved, it is not known if these were translated into positive interactions with children with disabilities.

Researchers have suggested that a combined cognitive behavioural approach involving information sessions and contact with people with disabilities is the most effective (Ison et al., 2010). Based on the multi-component model of attitude formation, children's attitudes made up of affective, cognitive and behavioural components. Therefore, it makes sense to have a program that targets all three. While awareness is crucial, exposure to disability is equally important (Diamond, Hestenes, Carpenter, &

Inneds, 1997). Children can benefit from learning how to play and interact with those with disabilities. Unfortunately, many of the intervention programs that have been implemented thus far have either been information interventions or behavioural interventions. Few programs have taken a combined approach (Ison et al., 2010).

Ison et al., (2010) implemented a combined intervention approach with 147 Australian children (ages 9-11). The program is called *Just Like You*. They used pre-post questionnaires and focus groups to evaluate the program. The questionnaire included questions pertaining to knowledge, attitudes and acceptance towards disability. During the two 90-minute sessions the presenters used discussion sessions, written activities, demonstrations and disability simulation activities in their intervention program. Also, one of the co-presenters had a disability. The cognitive component included discussions about different types of disabilities and discussions on stereotyping and name-calling. The behavioural component included activities and experiences such as disability simulation activities and contact with different people with disabilities. The focus groups run after the intervention involved select students that were thought to be able to vocalize their opinions about the program well. Following the implementation of the program, significant improvements in knowledge, attitudes and acceptance towards disability were made in the short-term.

The Just Like You intervention program is one of the first combined behavioural and cognitive intervention programs. Additionally, this study was one of the first to employ focus groups to look at children's responses to the program. However, the focus group was only made up of a few of the children. There is a research gap in qualitative data pertaining to children's acceptance towards disability before and after intervention programs (Rillotta et al., 2007, Laws et al., 2005). Few researchers have explored children's perceptions of and attitudes toward disability in their own words. Nor have teachers and students been asked to provide qualitative feedback about the intervention programs (Ison et al., 2010). There is a need for qualitative interviews with children pertaining to their understanding and knowledge about disability. This information seems to be crucial for the development of successful disability awareness programs. While the Just Like You program seems to provide a successful combined intervention. Many children could benefit from programs like the Just Like You program where they could gain access to both awareness and exposure to people with disabilities so that they could bridge the gap between their knowledge, behavioural intentions and actual intentions towards people with disabilities in the future.

Social Identity Theory

Children's attitudes towards people who appear and act differently than they do are formed at an early age. For this reason it is important that anti-bias programs teach children about difference when they are young. When children are of school age, they begin to form peer groups, often with children who look and act similar to themselves. Intergroup bias is a phenomenon characterized by the tendency for people to favor one's own group (the in-group) over other groups (the out-groups). Children's disability-related attitudes may stem from intergroup bias. Researchers have found that inter-group bias even applies to groups of people that have been artificially assigned, such as in a classroom. One theory that attempts to explain this phenomenon is the *Social Identity*

Theory (Tajfel & Turner, 1979), which proposes that individuals naturally identify with groups. *Self-Categorization Theory* (Turner, 1987) expands on the Social Identity Theory, and suggests that people categorize themselves and others in terms of attributes pertaining to the relevant in-group. This leads to an increased focus on intra-group similarities and intergroup differences. People stereotype themselves and others around them based on outstanding social categorizations leading to a stronger perceptual identity of group membership rather than personal being. There is an enhanced disconnect between the self and out-groups. Hundert, Mohoney, and Hopkins (1993) looked at the influence of special education teacher's in the inclusive classroom. They found that when the special education teachers focused only on children with special needs there was a greater peer divide between the children with and without disabilities. When the special education teachers focused on groups of children with and without disabilities, rather than only on the individual children with special needs, there were more peer interactions between the children with and without disabilities. This suggests that children pick up on being treated differently which can influence in-group and out-group divide. The tendency to identify with, and even favor one's in-group over other groups, leads to social stereotyping and exclusion. Children pick up on "differences" in children with special needs right away.

Contact Theory

As in the Just Like You program, researchers have found that contact with people with disabilities is crucial to attitude change. Helmstetter, Peck and Giangreco (1994), found that children without disabilities, who had previous contact with a child with special needs, had more positive attitudes towards disability, and viewed inclusion more favorably than their peers without previous experience. Children who have limited knowledge about, or lack of exposure to people with a disability, can form negative attitudes about disability indirectly. One proposed way of positively shaping attitudes about out-groups is through contact. *Contact Theory* (Allport, 1954) proposes that an interaction between out-groups may reduce stereotyping and prejudice. According to Allport (1954), four conditions must be met in order to reduce intergroup prejudice: equal status between the groups, common goals, no competition, and the permission of authority for contact. Intergroup contact, under these conditions, allows in-group members to get to know out-group members as individuals. Research findings have shown that children's attitudes about disability can be altered through intergroup experience.

In a study by Favazza and Odom (1997), the researchers used a variety of interventions to promote positive attitudes towards peers with disabilities among kindergarten children. At the school there was a separate special education class. In the first intervention group, the high-contact group, 15 kindergartners were taught about various disabilities through story time and through discussion. During the weeks to follow, the children in the high-contact group spent 15-minutes of structured free play with the children with disabilities three times a week. The 15 children in the low contact group only saw children with disabilities at recess time, without structured play. A control group of 16 children at the school without disabilities also participated. Children in the high contact group had significantly more positive attitudes than children in the low group, and the control group. The researchers suggested that regular, planned contact between peers with and without disabilities along with activities to promote awareness and acceptance of disability, can positively enhance children’s understanding and attitudes towards individuals with disabilities.

In a study by Nikolaraizi, Kumar, Favazza, Sideridis, Koulousiou, and Riall (2005), the researchers found that children in inclusive settings were more accepting of children with special needs than children who were not in inclusive settings. While the children in that study were understanding of individual’s with disabilities, their knowledge and understanding about disability was limited. In particular, they were more accepting of children with evident special needs such as someone who is visibly blind or in a wheel-chair rather than someone with a less obvious disability such as an intellectual disability (Nikolaraizi et al., 2005).

Diamond and Carpenter (2000) found that preschool children in inclusive programs have higher social acceptance ratings of children with disabilities. However, contact with children with special needs is often not enough. The placement of children with special needs in a general classroom does not ensure automatic acceptance by their typically developing peers (McEvoy & Odom, 1996).

Social Inclusion

Often parents and teachers worry about the affects of having children with special needs in the classroom on the academic progress of the typically developing children in the class. The academic outcomes of having children with disabilities in the class has been studied (Hunt & Goetz, 1997; McDonnell, Thorsen & Disher, 2003). Additionally, there has been research on the advantages of social inclusion for children with disabilities. Cole and Meyer (1991) conducted a longitudinal study on the social affects of integrated versus segregated schooling on children with severe developmental disabilities where 91 students, 55 of whom attended segregated schools, and 36 of whom attended integrated school, were compared on measures of social competence and observational social interactions. The researchers found that integrated placements predicted significantly greater scores on the measures of social competence after two years of study, compared to the segregated placements, which did not. While there has been research peripherally on the social relationships of children with developmental disabilities, none of these have specifically looked at the social relationships and the friendships between children with disabilities and their typically developing peers.

There have been multiple definitions of social inclusion, some of which focus only on the child with a disability and how they feel rather than focusing on both of the parties in a peer relationship. Schmidt (2000) defines social integration as the frequency and intensity of social contacts between pupils with and without special needs. This will continue to be the meaning of the word social inclusion when used in the study. All children, including those with special needs, benefit from social experiences. Children who have good friendships and exhibit caring behaviours can be good peer models for children with disabilities who may or may not have had as many peer experiences (Fisher & Meyer, 2002). Friendships between typically developing peers and disabled peers can help children with disabilities to make gains in their communication skills, social skills and can help to foster a more positive self-esteem and self-concept (Burnstein, Sears, Wilcoxen, Cabeloo & Spagna, 2004). Additionally, their typically developing peers can benefit from such a friendship. Inclusion can help general education students to have an increased awareness of others with diverse abilities and traits and to be more comfortable around other people with disabilities (Renzaglia et al., 2003).

Very few studies have involved qualitative analysis or case studies describing relationships between children with disabilities and their peers. Strully and Strully (1985) documented one of the first personal accounts of a friendship between a child with a developmental disability and their typically developing peer. They described the friendship as typical of young adolescent friendships in that they shared experiences and interests. Later, Staub et al. (1994) reported a case study of friendships between four elementary school children with and without disabilities. The case study was designed to present a picture of these peers in an inclusive setting, whom all shared quite an ordinary friendship.

Peer to peer interactions between children with and without disabilities can take different forms. Often, children try to take on the caregiver or helper role. Kishi and Meyer (1994) found that when fourth, fifth and sixth grade children were asked to talk about their relationships with classmates with disabilities, they described interactions such as assisting and instructing their peers. These "helper" friendships are often looked at by researchers in a negative light. Kishi and Meyer (1994) indicated that this is not a true friendship. However this begs the question, who has the right to decide if a friendship is real? As long as the friendship reflects a mutual interest it is real. Some research has looked at the adjectives that children use to define children with disabilities. Hazzard (1983), for example, found that on scales of children's previous knowledge about disability, the most common reference to disability adhered to the "sad" or "pathetic" stereotype of a disabled person. While many children indicate that they would never purposefully exclude or be mean to a child with a disability, they are often hesitant to befriend a child with special needs (Nikolaraizi, Kumar, Favazza, Sideridis, Koulousiou, & Riall, 2005). Further, the research demonstrates that children without disabilities typically do not interact with children with disabilities unless they are encouraged and supported (Odom & Brown, 1993). Researchers in Greece, while investigating children's understanding of both sensory and physical disabilities, found that children have positive attitudes towards educational inclusion, however they were less positive about activities where they would have to directly interact with children with disabilities(Magiati, Dockrell, & Logotheti, 2002). For example, children rated responses such as l*ike to be in the same school with* as higher than responses such as *sitting next to* a child with a disability. Hazzard (1983) found that children were more accepting of children with special needs in school activities than in more personal friendship activities. Hall (1995) assessed and observed the social interactions of four students with special needs in four different inclusive classrooms and found that each child with special needs had at least one reciprocal friend. Interestingly, the teachers involved in the study did not refer to the duo as friends and instead called the non-disabled child a helper. The children without disabilities, however, did refer to their peer with a disability as a friend. While research points to possible discrepancies between children's self-reported attitudes towards disability and their actual friendships and social interactions with children with special needs, there has been little research on investigating the discrepancies. An observation and self-reported attitude measure used together could help to see, in fact, if their self-reported attitudes towards disability predict their actual social interactions with children with disabilities. While there is great support that social inclusion benefits children with disabilities, there is still a need for research into the social benefits of inclusion for typically developing children.

Developmental Influences on Attitude's Towards Peers with Disabilities

To only look at theories of attitude development of children toward their peers with disabilities and infer their intention to form friendships would be a mistake. Friendship formation in children is a complex phenomenon that must account for developmental stages. With age comes cognitive and emotional maturation of children's ability to reflect on their own emotions and behaviours. This maturation allows for deeper interpretations of friendship. Especially as children grow-up, there is quite a difference between peer acceptance and personal friendship. Hartup and Stevens (1997) stress that as children progress through developmental stages, they expect increasingly greater intimacy and stability with their friendships. With maturity, children are more able to take the perspective of others either by understanding the circumstances facing their peers, or to have emotional responses similar to those felt by their peers. Empathy, the ability to take the perspective of others, is associated closely with pro-social behaviours and a considerate attitude (Hartup & Stevens, 1997).

Research in the area of pro-social behaviours has suggested that children's awareness and understanding of other people's emotions are an important factor in the development of these behaviours (Eisenberg & Miller, 1987). Garner (1996) found that in third and fourth grade children, those who were more sensitive to the emotional cues of others on an interview measure, received higher ratings on a measure of pro-social behaviours. This might suggest that older children, who are more aware of the emotional cues of others, would be more likely to exhibit caring behaviours. Conversely, engaging with children with special needs may allow children to become more attuned to the emotional cues of others.

Diamond (2001) found that opportunities to play with classmates who have disabilities are related to children’s sensitivity to the needs of others. Children who had social contact with their peers with disabilities were more sensitive to cues associated with different emotions on an emotion situation knowledge measure, and were more accepting of individuals with disabilities than were children who were observed playing only with typically developing children. This study supports the idea that experiences in inclusive settings support children’s positive attitudes towards their disabled peers, and pro-social behaviours. Many studies have indicated that there is a correlation between children’s positive attitudes and interactions with peers with disabilities, however it is hard to say which came first. Researchers have found that behaviours and cognitions are mutually important and influencing factors in the development of attitudes towards children with disabilities (Eagly & Chaiken, 1993).

Benefits of Social Inclusion for Typical Students

There are many social benefits of inclusion for typically developing students in the classroom. Students learn how to be friends with people who are different, which can increase their acceptance of diversity. That is, interacting with children with special needs can help typically developing children to improve their interpersonal skills and their communication abilities. Engaging with children with a disability can also increase typically developing peers’ self-esteem and self-confidence (Kishi & Meyer, 1994). One study found that children who are educated in an inclusive classroom are more likely to go into a career where they are helping people than those who were not educated in an inclusive classroom (Vizziello, Bet & Sandona, 1994). Diamond, Hestenes, Carpenter, and Innes (1997) found that preschool children in an inclusive classroom have more knowledge of long-term consequences of disabilities and were more likely to accept children with a disability then children in a traditional preschool. Thus the benefits of inclusion are positive for children with special needs and for their typically developing peers. In a case study of four friendships between children with developmental disabilities and a classmate without disabilities, many benefits from the friendship were reported and identified for the children without disabilities (Staub et al., 1994). The typically developing children said that they felt good about themselves because the children with special needs looked up to them. When asked to describe their disabled friend, children said that their friend was nice or fun to be around (Staub et al., 1994). Very few studies have looked into specific friendships between typically developing children and children with disabilities. Much can be learned through investigating these relationships.

Social Relationships Between Children With and Without Disabilities

Whereas there has been an abundance of research on the social relationships and friendships of typically developing children, there is limited research on the nature and quality of relationships between children with and without disabilities. There has been some research to indicate that these friendships differ in form and function from those between typically developing peers (Hurley-Geffner, 1995), and others that indicate that these friendships are similar in manner, and characteristics (Buysse, 1993; Staub et al., 1994). Given that inclusion is becoming the norm, it is important that researchers describe and characterize relationships between peers with and without disabilities. Understanding the nature of these friendships may help teachers and parents to encourage children to interact with their classmates with special needs. While there are differing views on how to categorize friendships, all researchers agree that friendship is the most important of all social relationships (Bukowski, Newcomb, & Hartup, 1996). Friendship has been described in many ways including mutual preference, affection, and having fun together. What seems to be of importance is the shared experience of friendship. While all friendships share this common feature, they can differ both in function and in form. Hurley-Geffner (1995) described the relationship between children with and without disabilities to be tutor-tutee or helper relationships. There has been a small body of research on qualitative investigations of relationships between children with disabilities and their peers in inclusive settings. Strully and Strully (1985) provided a case study account of a friendship between one child with a developmental disability and their typically developing friend. The authors described this adolescent friendship as a typical friendship; characterized by common interests. Additionally, Staub et al. (1994) documented a case study account of four friendships of pre-school aged children with and without disabilities. The children in this study, both disabled and non-disabled indicated that their friendships with one another were mutual and non-tutorial in nature. The children described their friendships as mutually affectionate. When asked how the friendships were formed, the children stated reasons of helping each other, proximity and playing together. Further observations revealed that cooperative learning activities allowed for more friendships between children with and without disabilities to form

(Staub et al. 1994). Dietrich (2005) looked into individual characteristics of friendships between children with and without disabilities and found that for young children, the concept of a friend was described as a playmate or someone to spend time with. Dietrich found that one crucial component of friendship, as described by the children, was being nice to one another. This quality of niceness was described in terms of behaviours, such as: sharing materials, taking turns, providing assistance, and playing together. Some themes that emerged concerning why children became friends were that the children interacted well, displayed similarities in play styles, shared common interests, and that the children identified needs in each other and were able to address these needs. Other factors were proximity and parental support of the friendship. In this case the children did identify needs in one another that the children were able to address, thus the children were able to help one another. Interestingly, this helping nature of the friendship was mutual (Dietrich, 2005). The research in this area is still limited and mostly consists of researchers accounts of friendships, rather than self-described accounts of friendship by the children themselves.

Reverse Integration

While inclusion is ideal, it is not always available for students with unique educational and physical needs. Many students with more severe disabilities are in segregated classrooms with little to no interaction with typically developing peers. Even in some "integrated" classrooms, children with special needs spend a great deal of their day outside of the classroom. Schnorr (1990) observed an inclusive class of grade one students and found that most of the children in the class defined belonging in terms of participation in the classroom. Proximity and interactions within the classroom played a role in determining friendships. One child in the class had special needs and spent much of his time at school outside of the class. The children in the classroom said that they did not consider him to be part of their class, nor consider him a close friend, because he always left the classroom with his shadow.

A reverse integration program is one way to bring typically developing children into the classroom while maintaining the benefits of a special education school or classroom. Children who are reverse integrated can provide peer interaction opportunities to the special education classroom. The children who participated in the reverse integration program described below, met with the teacher's and principal of the school at the beginning of the year to to talk about why they wanted to participate in the program and to exhibit their social skills (Schoger, 2006). The goal of the program was not to have the typically developing child as a mentor. Rather, the benefits were meant to be two sided. The students worked together in the hope that they would develop mutually reciprocal friendships, or at least mutually reciprocal partnerships within the classroom. Another goal of the program was to give the typically developing children new perspectives on disability. It was the hope that these children would learn acceptance and understanding for difference. One case study of a reverse integration program was examined in a general education program that had an inclusive classroom (Schoger, 2006). This classroom was made up of one child with cerebral palsy, one child with down's syndrome and one child with autism. The program took children from the general education classroom and introduced them to the children with special needs during recess. The children were integrated and were taught to play games, work on art projects and to talk together. It was found that the typically developing children in the reverse integration program accepted their disabled peers and formed friendships with them. Some of the children played with their new friends outside of the school setting (Schoger, 2006).

While inclusion of all children is ideal, there are many instances where children with severe disabilities cannot attend inclusive schools. When schools are not equipped with adapted facilities or personnel who can help with diapering, transferring and additional classroom help, full inclusion is near impossible for children with more severe disabilities. Reverse integration is one way of making a special education school more diverse. While reverse integration is not the epitome of equality, it is one model where children with and without disabilities are given the opportunity to spend classroom time, and free time, together. The program is unique because typically developing children become the minority rather than the usual instance where children with disabilities are a minority. Very few researchers have investigated the effects of such a program on the typically developing children who partake in the program. Thus, this study is distinct from previous research that has looked at children's attitudes towards disabilities. Children who are part of the RI program are exposed to disability in a more concentrated environment than they would be in an inclusive school. Therefore, their attitudes towards disability may differ from most children's attitudes after a year in an inclusive school.

Summary

In sum, the aforementioned research pertaining to typically developing children's attitudes towards disability, points to a multi-model system of beliefs and attitudes. It is crucial to consider the potential role that programs, such as the reverse integration program, can play in facilitating children's attitude formation and actual behaviours.

Contact Theory (Allport, 1954), suggests that exposure between children with and without disabilities, for an extended period of time, may reduce stereotyping and prejudice. Also, Ajzen and Madden’s (1986) Theory of Planned Behavior proposes that positive attitudes towards peers with disabilities correlate with positive interactions and friendships with children with disabilities. The social benefits of inclusion have been documented for children with disabilities; however there has been little research on the social benefits of inclusion for typically developing children. For this reason, there is a need for further research on programs such as the reverse integration program outlined below.

The Present Study

Purpose

It is important to understand how children conceptualize disability and to understand if these attitudes can be altered. The following study was an endeavor to gain a deeper understanding of the intentions of children towards their peers with a disability. Unlike previous research in the area of children’s attitudes towards disabilities (Cole & Meyer, 1991), this study evaluated the affects of an RI program on children’s subsequent attitudes about disability and their interactions with children with disabilities. Whereas most research in the area has reported children’s reasoned behaviour, this study reported both typically developing children’s reasoned behaviour, and their actual interactions with children with disabilities. Therefore, unlike some quantitative research in the area of typically developing peers’ attitudes towards their peers with disabilities (Nowicki, 2005), the children who were part of the RI program were given the chance to express themselves and their feelings about the program and their attitudes towards disability in an interview at the end of the reverse integration program.

Research Questions

Guiding the present study were four primary research questions. The questions were both exploratory and quantitative in nature. The primary method of investigation was a qualitative approach, however some quantitative data was collected to support the qualitative findings. The questions were as follows:

1) How do children view their experience in the reverse integrated program and what are their conceptualizations about disability after one year in a reverse integrated program?

2) Why do parents choose to place their children in a reverse integration program and what do they hope that their children gain from the experience?

3) Will children’s attitudes towards disability change over time after a year spent in a reverse integrated setting?

4) Is there a relationship between typically developing children’s social interactions with children with disabilities and their self-report measures of attitude towards disability after one year in a reverse integrated setting?

Methodology

Research Design

To explore the research questions previously outlined, an embedded mixed-methods design was used. This type of a research design is characterized by the collection of both quantitative and qualitative data, with one form of data playing a primary role and the other playing a supportive secondary role (Creswell, 2008). Within the present study, the quantitative data were embedded within a qualitative research design in order to enhance the interpretation of the qualitative results. Both quantitative and qualitative data were collected and used to understand the research problem, however the quantitative data played a supportive role to the primary qualitative data (Creswell, 2008).

The qualitative data collection followed a grounded theory format. As outlined in Merriam (2009), with qualitative research, the investigator is the primary instrument of data collection, and analysis assumes an indicative stance and strives to derive meaning from the data. The end result is a theory that emerges from or is grounded in the data (Merriam, 2009). The observation component of the present study was used in both a qualitative and quantitative manner, to keep track of the frequency of interactions initiated by typically developing children in the RI program, and to collect field notes pertaining to the context and categories of play that the children were engaged in. The interviews were qualitative in nature, as were the parental questionnaires. Triangulation was used to increase the credibility of the findings (Merriam, 2009). In sum, the interview component was used to gain insight into each child's experience. Additionally, a self-reported attitude towards disability measure was administered to the children both at the beginning and end of the program to measure the children's attitudes and to enhance the qualitative data that was collected.

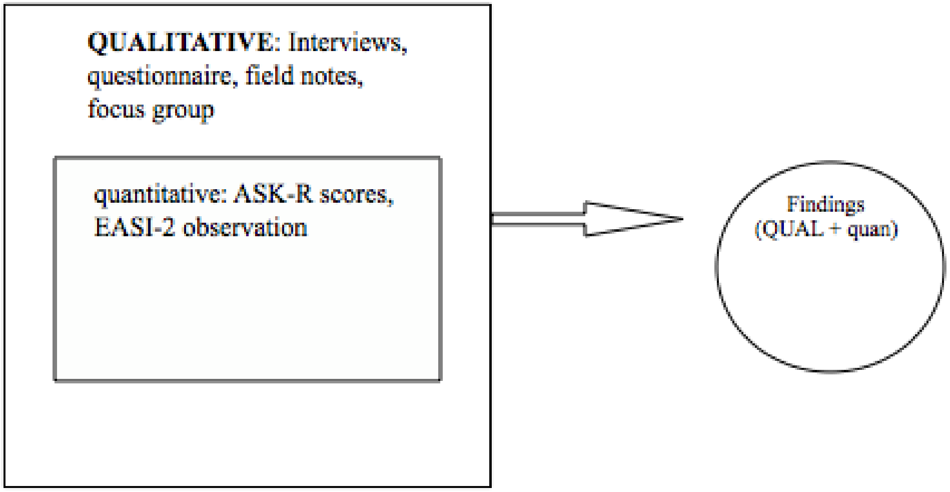

Figure 1. Mixed methods design.

Participants and Setting

Participants. The reverse integration program described in the study had 12 children participating in the 2010-2011 school year, and 8 out of the 12 typically developing children in the RI program and their parents volunteered to take part in the study. More specifically, two children in pre-school, one child in grade one, one child in grade two, two children in grade four, and two children in grade five participated in this research (M = 8.13 years). Both male and female children chose to participate in the study (2 females and 6 males). Each child's parents were also recruited to fill out a parental questionnaire. In seven of the families, both the mother and father participated in the research, and in one family only the mother participated. All of the children's names were changed to pseudonyms to protect their identity.

Sampling. This particular reverse integration program was selected based on a purposeful selection method versus a random one. The program is one that is unique to the area and it is the longest running program of it's kind in Canada. Because this school program is so unique, generalizations cannot be made from the study. The program, however, can help to inform future research in the area of disability awareness and anti-bias education. The experience that each child has in the program is different, yet equally valuable to learn from. All of the participants were recruited from the reverse integration program at a special education and rehabilitation centre and school located in Montréal, Québec. The target group of the present study was typically developing children who were enrolled in a year long RI program at a special education school. Because the aim of the present study was to study typically developing children in a reverse integration program, a program that is unique, a self-selective sampling method was used. In early October, each child took home a parent information letter and consent form explaining the purpose of the present study (Appendix C & D).

Setting and Programming

Location. The location of the research project was an educational and rehabilitation center and school for English speaking hearing impaired or children with physical disabilities. This school features the only RI program in Montreal. The program has been in effect in the school for 38 years. The school population is made up of children who are between the ages of 4 and 12 years of age who have a variety of physical and intellectual disabilities. Currently, the school has a population of 133 children who are physically disabled/language impaired and 28 children who are hearing-impaired. The classrooms are divided according to varying needs. There is an augmentative communication class, which uses many resources from the rehabilitation centre. These children are mostly non-verbal or have little verbal abilities. The classroom focuses on speech and all of the children use augmentative forms of communication such as picture symbols, switches and voice output aids. The children with a hearing impairment receive a total communication approach to teaching. This approach is a multi-modal in nature, which emphasizes speech and sign language. All of the deaf education teachers are trained in American Sign Language (ASL). Both groups of children at the school generally have a mild intellectual and/or learning impairment.

Programming. Generally, in Canada, children with a physical disability are integrated into inclusive classrooms. Families also have the option of a specialized school, like the aforementioned school, when children cannot function in an integrated school. Children at the school often have greater medical and physical needs than children who are integrated. Moreover, there are often mobility issues for children in wheelchairs who require adapted buildings and classrooms. Children at the school often absent from many classes for hospital visits and spend a lot of time in the rehabilitation side of the school receiving physiotherapy, speech therapy and counseling. The school is fully adapted and is equipped with a wheelchair-adapted pool, gym, and buses. All of the children have access to activities such as adapted horseback riding and skiing. Inside of the school, the children are fitted with wheelchairs, walkers, bicycles and other devices that are constantly being updated as they grow and change. Additionally, classroom sizes are capped at 10 children per class. Each classroom has a smart board and numerous adapted resources as needed. There are 10 teachers specialized in deaf education, and 22 teachers who have special needs training. Every teacher has access to a class assistant who helps the teacher with additional needs such as diapering and cleaning.

While the majority of children at this school are physically impaired or have a hearing impairment, a small fraction of children are what the school calls reverse integrated. As practiced for 38 years at the school, 12-20 typically developing children are enrolled in the school for a period of one year. The typically developing children in the RI program were screened in order to ensure that they possessed the ability to cooperate in a group, and to model average social behaviors for their age group. The goal of the program was to have children with and without disabilities working and playing together at school. Rather, all of the students in the class, both disabled and not disabled, were meant to work together in the hope that they would develop mutually reciprocal friendships or at least mutually reciprocal partners within the classroom. Another goal of the program was to give the typically developing children a new perspective on disability. It was the hope that these children would learn acceptance and understanding of difference. Though there has been an abundance of anecdotal evidence about the success of the program, there has never been a systematic evaluation of typically developing children in the RI program's acceptance towards their peers with special needs, from the start to the finish of the program.

All of the observations were taken during "small recess" and "big recess," which occurred after the second period and the fourth period respectively. Small recess lasted for 15 minutes and big recess lasted for half an hour. The location of recess varied depending on the weather. When the weather permitted, all of the children played on the main playground, which was located at the front of the school. Roughly three quarters of the playground was concrete and about one third of the playground was sand. The playground had an adapted play structure that accommodated children with wheelchairs. It was also equipped with a variety of sensory equipment. This play structure seemed to be the most popular area to pass time during recess. Additionally, on the playground there was a small hill that could be reached by both a ramp and a set of stairs. On the hill there were two small picnic tables, which had a jungle themed canopy above them. During the winter, there was another hill that was made up of snow that had been created for the children to climb and slide down. This also seemed to be a popular area. Many of the children passed their time by building snow forts or by playing in the snow.

When the weather was too cold or too windy the children were separated into two groups and were spread out in two different areas. The older children (grades 4, 5 and 6) stayed in their lunchroom, which was in the basement of the building, and either watched a movie, or played board games inside. The younger children usually stayed in their lunchroom. When they stayed in the lunchroom they spent their time drawing, playing with Lego, or playing board games. When they were in the gym, they spent their time running, skipping rope or playing with balls. In the wintertime, small recess was always in the gym. During small recess all of the grades were together.

Furthermore, on Tuesdays and Fridays a number of children partook in what was called the *bike program*. The children who participated in this program mostly had a mild to moderate physical disability. These children were taken out of their wheelchairs if they have them and were placed on adapted bicycles or gate trainers. Throughout big recess they followed a route around the first floor of the school and did laps on their bicycles. Many of the typically developing children in the RI program aided in helping their peers with the bike program. The typically developing children in the RI program who were in grades three through five, helped out the younger children with disabilities. The older children in the RI program took on leadership roles and were stationed throughout the first floor to make sure that the children were able to navigate the pathway easily. They also cheered on their friends and helped them when they needed a push.

Disability awareness curriculum. The children who were part of the RI program learned about disability mostly through exposure, however the school practiced an open line of communication with the children when it came to learning about disability. The typically developing children in the RI program were encouraged to help their friends in the classroom and on the playground. At the beginning of the year many of the typically developing children at the school participated in the *helping hands program*. They were taught about wheelchair safety and wheelchair etiquette. They were informed that someone’s wheelchair is an extension of their body, and that they should never touch or push someone’s wheelchair without asking. Additionally, they were able to practice being in a wheelchair. The school had spare wheelchairs and the typically developing children were encouraged to try participating in wheelchair sports activities or to help aid their friends with physical disabilities by helping to push their chairs or by helping to adapt the sports equipment for their peers. In the classroom, the typically developing children in the reverse integration program helped their teachers by writing in their friends agenda’s, by helping them to read, or by helping to maneuver their chairs around the classroom. They learned that there are many different ways of achieving the same goal and were shown that all activities are accessible to people with disabilities when they are adapted. Thus, the typically developing children in the RI program were thought to think outside the box and to view various levels of ability as an exciting challenge to an activity rather than a hindrance. Thus, cognitively the children in the program were introduced to disability in a non-judgmental atmosphere where they were encouraged to ask questions and to partake in their peers' academic and social development. Not only were they in constant contact with people with disabilities, they are also made to be aware of the variety of abilities in their classroom.

Procedure

Ethical approval and recruitment. Ethical approval for this research project was obtained from Concordia University's ethics review board on August 30th, 2010 (see Appendix A for a copy of the approved letter). The English Montreal School Board also met on October 14th, 2010 to consider the proposed project, and it was approved on October 20th, 2010 (See Appendix B for a copy of the approval letter). Once the project was approved at this level, the principle of the school was contacted and asked if the school was willing to allow the research to take place within the school context. Verbal consent from the principal was received at the end of October. Finally, the teacher's of the children who were recruited were approached by the researcher and were told about the project. They were given a brief information letter about the present study and were informed that the study would take place during the school day.

Data collection. The data collection for this project spanned approximately 7 months, beginning October 21st, 2011 and continuing until June 10th, 2011 (See Figure 2).

During this time the primary researcher spent two to three days per week at the school, both as a volunteer and as a researcher. For a year prior to the research project, the primary researcher worked in the school twice a week as a volunteer in order to ensure that the students and teachers became comfortable with the presence of an additional adult. Being aware of the school community allowed the researcher to gain awareness about the reverse integration program. Because the researcher was a familiar face in the school there may have been less of an observer affect on the children. Additionally, a research assistant aided in 25% of the data collection. The research assistant was new to the school and did not know the children. Therefore, the RA was able to have an uninfluenced perspective on the children and their social interactions.

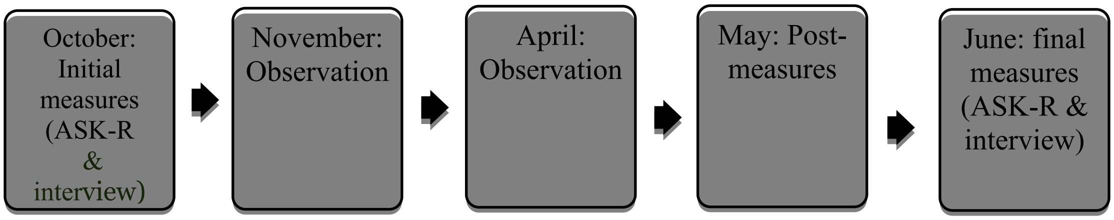

Figure 2. Visual representation of the timeline of the project

At the end of October the researcher distributed a parental consent form and an information letter to the parents of the typically developing reverse integration children. After parental consent was received, each child was taken from the classroom for the duration of one half hour period in order to fill out the first measure and to complete an interview. The children were told that the project was a school project to look at their participation in the RI program (See appendix F). The children were told that they would be asked questions about the program, as well as their thoughts and feelings about their classroom and their friends. Verbal assent was received from all of the children. The children were told on several accounts that they did not have to answer the questions and that they could ask to discontinue the interview if they did not want to continue.

The interview took place in an extra classroom that was not being used. Only the primary researcher and the child were present for the duration of the interview. The interview was audio-taped. The aim of the interview was to collect information on these children's perceptions of disability both before and after exposure to children with disabilities during the RI program. Equally important, the aim was to understand children's perceptions of their relationships with their friends with disabilities. During the interview, the primary researcher was careful not to use the word "disability" and let the child speak about their class and their friends (See Appendix I). The children were also asked to talk about their closest friends and to say why that child was their friend. The children were asked which of those children were from the reverse integration program and which of them were friends from outside. The children explained what made that child their friend. Additionally, questions about their friends, their class, and the program were discussed (See Appendix I). At the beginning of the year, the primary researcher found that the two preschool aged children had trouble answering the interview questions by sitting and listening. Instead, the children were told to draw a picture of their class and their friends. Once the children were drawing, the researcher asked about particular children in the drawing. All of the same interview questions were asked while the children were engaged in drawing. The same interview questions were asked at the beginning of the year in October and then at the end of the year in June. The only question that differed was the last question, which asked if the child enjoyed their experience in the reverse integration and what they liked about it. They were also asked to think about how the school compared to their previous school. This question was only asked at the end of the school year.

All of the children's responses were audio-taped, transcribed, indexed and coded. They were indexed according to; a) feelings about the reverse integration program, b) factors contributing to friendship formation with children with disabilities, c) types of social interaction, d) characteristics of friendships with children with disabilities differing from friendships with children without disabilities, and e) attitude formation towards disabilities.

Once the interview was completed, the ASK-R scale was administered. The children were told that they would be asked some questions and that they could answer yes, maybe or no (See Appendix F). They were told that there was no right answer and that they could pass on a question if they did not want to answer it. The younger children were shown pictures of yes (happy face), maybe (confused face), and no (sad face). The researcher used practice questions to make sure that the children understood how to answer. For example, the children were asked, "is the sky blue?" and "is the grass pink?" Once the children understood how to answer, the questions were administered. This measure was administered once at the beginning of the year in October, and again at the end of the year in June. After the measures were completed, the researcher thanked the child for participating in the project.

In summary, observations of the children were conducted throughout the year using the EASI-2 social interaction scale (Beckstead & Goetz, 1990). The children part of the RI program's interactions with their peers with disabilities in the beginning of the first semester (initiations and acknowledgments) were counted and compared to their interactions at the end of the second semester. The researcher collected ten observations per child, five in the beginning of the first semester, and five at the end of the second semester. The observations lasted 10 minutes and took place during big and little recess. During these observations the primary researcher made sure to keep out of the way of the children and tried not to disrupt their play patterns. A research assistant observed and recorded the children's interactions 25% of the time in order to ensure for reliability of the observations.

Measures

Since the focus of the study was on the efficacy of the reverse integration program, it was important to evaluate the program both at the beginning and at the end in order to properly evaluate its efficacy, which was based on children's self-reported acceptance levels towards children with disabilities, and their actual interactions with other children with disabilities. Favazza and Odom's (1996) Acceptance Scale for Kindergartners (ASK) was used to measure the typically developing children's attitudes towards disability (See Appendix G). This scale was developed based on the Acceptance Scale (Voeltz, 1980) to assess the attitudes of young school aged children toward children with disabilities, and was later revised (ASK-R). The Acceptance Scale is a psychometrically valid instrument with a split-half reliability coefficient (Spearman-Brown corrected) of .82 and an alpha coefficient of .77 that is used with older school aged children (Voeltz, 1980). The ASK-R scale is a modified version of the Acceptance Scale, which is designed for a wider age range, and poses questions that can be understood by children at a lower developmental level. According to Favazza and Odom (1996), these scales were chosen because they are simple enough for a 4-year-old to understand, yet are still relevant to a 10 year-old. The scales were administered to the typically developing children in the RI program once in October, and once at the end of the school year in June. The scales were read aloud to each of the children. In order to reduce the effects of social desirability, the children were told that: "On this questionnaire sometimes kids answer the way that they think we want them to answer. We do not want you to do that. It is important to answer what you really think" (Hazzard, 1983, p. 133).

The Acceptance Scale for Kindergarten, Revised

The Acceptance Scale for Kindergarten Revised (ASK-R; Favazza & Odom, 1999) is an 18-item, standardized assessment tool is used to evaluate young children's attitudes towards disabilities, using a question format. Visual representations of the words *yes*, *no* and *maybe* were added for deeper understanding (Favazza & Odom, 1999). Before the start of the questionnaire, a practice question was used to see if the child understood the visual representations. For example, the child was asked: "Is the sky blue?" Once the children understood the possible answers, the scale could be administered. The measure should be read out loud by an adult with a neutral tone. In a measure of internal consistency, an alpha coefficient of .79 was found (Favazza & Odom, 1999). The scale took approximately 20 minutes to administer. To compute total ASK-R scores, a score of zero was assigned to a non-accepting response, a score of one was assigned to a neutral response, and a score of two was assigned to an accepting response. The scores could range from 0 to 36, with high scores reflecting accepting attitudes and low scores reflecting non-accepting attitudes. Their final scores were scored on 36 and were converted to an average.

Parental Questionnaire

Because the children's previous contact with someone with a disability could influence their pre-test scores, it was important to obtain information regarding previous experience and exposure to disability before the start of the RI program. The parents of the children who were part of the RI program filled out the *Parental Questionnaire,* along with the take-home parent consent sheet (See Appendix E). The researcher, for the particular use of this investigation, developed this questionnaire. The questions addressed whether the children participating in the reverse integration program had had previous contact with a person with a disability. Specifically, the questions established the nature of the relationship, the recency of the contact and the frequency of said contact.

Additionally, as further qualitative data, the parents were asked to describe why they decided to place their child in the reverse integration program, and what their expectations for the year were. The parents filled out the questionnaire once in October at the start of the academic year.

Observation

In addition to the quantitative measure of attitude, an observation was used to measure actual interactions between the typically developing children who were part of the RI program and their disabled peers. At first the observation process was informal. Prior to coding the observations, the primary researcher observed the typically developing children during recess and lunchtime. During the observations, care was taken to be unobtrusive and natural. Getting to know the children, the teachers, and the staff at the school helped to build up a rapport in the school and to develop a sufficient way to evaluate the program. However, the primary researcher was biased to a certain extent when viewing the children because knowing them made it difficult to step back and observe them without taking into account each child's background information and individual personality traits. The research assistant, who was present for 25% of the observations, was used to make sure that the observations were reliable and accurate.

Recess provided ample opportunities for natural social interactions, therefore this time was used to collect the observation data. The Educational Assessment of Social Interaction (EASI-2), was selected in order to evaluate the social interactions between students with severe disabilities and non-disabled students in integrated schools (See Appendix H). The EASI-2 (Beckstead & Goetz, 1990), was used to measure social interactions between children with and without disabilities on four dimensions: 1) Role (initiate or acknowledge); 2) Purpose (Social or Task related); 3) Topography (on task, no participation, isolate, aggressive, self-stimulatory behaviour or mild inappropriate); and 4) Descriptive information. The descriptive information column was used to describe the children participation in the social encounter, and to describe the nature of their encounter. In this case, the frequency of interactions between the typically developing children and their peers with special needs, was recorded. The scale uses a sampling method where the occurrence or non-occurrence of specific behaviours was coded and scored. The scale follows a focal-person sampling method meaning that the observation focuses specifically on one child for each sampling period. Data collection followed a 15 seconds to observe and 15 seconds to record time sampling format where each horizontal row within an observation block represents 15 seconds of observation of one child and any interactions that he or she might have with a disabled child. In the original format, the left column is used to score the behaviour of typically developing children and the right columns are used to score the behaviour of children with disabilities. The scale was modified so that the left column would indicate the children without disabilities' initiations and the right scale would look at the more specific types of peer interactions that the typically developing children initiated. Because the concentration of the study was on the typically developing children, the focus on the scale was shifted as well.

The scale can be used with little training and is reliable. According to Goetz and Beckstead (1990), inter-rater reliability data of the EASI-2 were gathered and the mean inter-rater reliability score was .958 with a range of .759 to 1.0. The results from the observations would be used to estimate the proportion of time spent on peer behaviours between children with and without disabilities, and a frequency of scores would be given. The scale was scored according to the listed criteria. Under the category of role, an initiation behaviour is noted with the letter I. An initiation is, "any cue or behaviour directed from person A to person B resulting in social contact" (Goetz, & Backstead, 1990, p. 5). Initiations set the occasion for a social interaction and can be vocal or gestural in nature. Inappropriate behaviours should be recorded and noted in the space allotted for notes. The initiation was either accepted or rejected. Only the first initiation and reaction in that interval was recorded. Initiations were scored according to who the child was making the initiation towards: D (child with a disability), T (teacher), A (adult) or RI (other RI child). If the typically developing child initiated the interaction, the interaction column under RI was filled in (See Appendix H). If the typically developing child acknowledged a social initiation, the response was marked as an acknowledgement. Again, if the response was inappropriate, this was noted. Additionally, the purpose of the initiator's interaction was scored as either social, or task-related. Finally, topography was scored as either on task or not on task, isolated, aggressive, inappropriate to self or mildly inappropriate. Under the notes column, a qualitative note such as the setting or the game that was being played was recorded. The observations of each individual RI's behaviours were repeated over the duration of preselected moments of time. Each typically developing child was observed during the start of the school year (October and November) and the end of the school year (April and May). The observations took place during recess time (either lunch or short recess) and lasted for the duration of 10 minutes an observation. A research assistant was present during 25% of the observations in order to assure inter-rater agreement. The primary researcher and the research assistant scored the observations independently. Only after the observations were conducted were the scores compared. The research assistant was not given the name of the child or any information regarding the child's identification. Prior observations of the children were not discussed with the research assistant.

Interviews

Interviews were conducted with the children both at the beginning of the school year in October and at the end of the school year in June. The interview style was an open-ended semi-structured interview style, where the core questions were used with every child, and then various probes were used depending on their responses. In order to make sure that the children's responses were genuine and not brought on by the researchers own understanding about disability, the interview questions were quite broad.

For example, the word disability was not used. The typically developing children were asked to describe their friends, their class, and the reverse integration program. The interview was framed within the context of diversity that exists between all children. Research has shown that it is possible to tap children's understanding about disability in an unconstrained way. Thus, when the children brought up disability, it was spontaneous and within the context of discussing diversity.

The children's interviews were audio taped, and then transcribed. The primary researcher analyzed the interview data based on principles of grounded theory by focusing on related comments that shed light on the study at hand. The grounded theory indicated concepts to form categories, where connections and similarities between the categories were examined using a constant comparative method (Creswell, 2008). Based on this comparative method, final meaningful categories emerged.

Focus Group

Further, the primary researcher conducted a focus group with the children ages 6-11, (*n* = 5) in order to bring about group discussion of the program. The questions asked in this setting were broad, such as "what did you like and what did you dislike about the reverse integration program," and the researcher allowed the children to guide the discussion further. Again, in this setting the researcher did not mention the term disability nor were subgroups of disability brought up. Here the children were able to discuss their thoughts and feelings about the program as well as to ask questions to their RI peers about their participation in the program

Inter-observer Agreement

Inter-rater reliability was calculated on an interval-by-interval basis using Zirpoli and Melloy (1983) formula. The number of agreements between raters plus the number of disagreements was multiplied by 100. The second observer was present for 25% of the total observations for each child. Thus, the observer observed 2.5 out of 10 of each child's observations. The observations were recorded independently. The mean percentage of agreement by subcategory of social interaction was 90.16%. Additionally, 25% of the transcripts were coded by a research assistant (4 out of 16 transcripts) and there was 97% agreement between the coders.

Results

In order to address the research questions previously outlined, an embedded quasi-experimental mixed method design was employed. The focus of the research project was qualitative and the quantitative data played a supportive role to enhance the qualitative findings through descriptive results (Creswell, 2008). The following results will first address the qualitative findings and use the quantitative data to enrich these findings.

Qualitative Results

Qualitative data analysis. Qualitative data were collected throughout the course of the RI program in the form of a parental questionnaire, field notes from the observations and an open-ended interview which was employed both at the beginning and end of the reverse integration program. The interview responses were organized, coded and analyzed through a coding scheme that was created based on the data. The coding scheme was organized with overarching themes and subsequent codes. A frequency of the codes was tallied and the most common occurrences of codes were discussed in the following.

Research question 1. How do children view their experience in the reverse integrated program and what are their conceptualizations about disability after one year in a reverse integrated program?

Themes. To answer the primary research question, children's interviews from the beginning and the end of the program were reviewed, organized, coded and analyzed for emerging themes and codes. A variety of themes emerged with common subsequent codes. Some of the codes that emerged could be grouped under the themes. For example, the first theme was, *reasons for being friends with a child with a disability*. Under this theme, *shared experiences*, and *positive character traits* were the most prominent codes. Another overarching theme that emerged was *similarities and differences between people with and without disabilities*. Children referred more often to the *similarities* than to the differences. When they did mention differences, they referred to having a *different way of doing the same thing*. Similarly, one theme was *understanding disability*. From this theme, common codes were *physical markers of disability* and *difficulty understanding intellectual difficulties and learning disabilities*. Finally, the last theme that emerged was *empathy and helpfulness*. From this theme the children expressed f*eeling good for helping*, *increased self-confidence from helping*, *the enjoyment of no bullying*, and a *feeling of amicableness between the different grades*.

Reasons for being friends with a child with a disability. At the beginning of the year the interviews revealed that the reverse integration children were getting to know their classmates' who had a variety of disabilities though deep friendships had not yet been formed. Many of the children indicated that they liked their class, their teacher and their friends and that everyone was nice to one another. When they went into detail about each child in their class, they mostly described what was coded as *positive character traits*. The children described their friends as being fun, good at sports, helpful in the classroom, or friendly. However, the second set of interviews revealed deeper friendship connections. These *positive character traits* remained, however the children were more descriptive when referring to their friends with disabilities. For example, one child said that they liked their friend because, "they give me backup" on the playground. This child felt that their friend with a disability stood up for them and were protective of them on the playground. It was evident that certain groups had formed within the school, particularly among the girls who spent most of their lunch or recess hour with small groups of girls, chatting. The children also listed, what was coded as the second code, as *shared experiences*, among reasons that they were friends with some of the children with disabilities. For example, some of the children talked about playing ball and chasing games together. One of the typically developing children in the RI program talked about getting together with her best friend on the weekends for sleepovers and for bowling. Their friendship was of interest because the child with a disability had cerebral palsy and required a lot of help to move around, use the washroom and eat, however the two children often got together outside of school with the help of a babysitter who would help Stephanie out. The typically developing child, however, said that her babysitter was nice and that she did not get involved too much when they played together. The children listed other reasons for being friends with children with disabilities, however positive character traits and shared experiences were the most commonly referred to. Whereas at the beginning of the school year the children talked about the children with disabilities in their classroom as being more of friendly acquaintances and classmates, at the end of the year they talked more about specific qualities about their friends that made them enjoyable to be around and fun to hang out with.

Similarities and differences between people with and without disabilities. The typically developing children in the reverse integration program also talked about the similarities and differences that existed between themselves and their friends with disabilities. The children seemed to speak more about the similarities amongst themselves than the differences, especially at the end of the school year. Thus, the first code was *similarities*. One of the youngest children, Greg, was asked how his best friend Ryan, who had muscular dystrophy, was the same or different from his best friend at home, a typically developing child named Monty. After thinking about this for a second he replied that they were different because Ryan had a blue lunch box and Monty had a spider man one. Even though Ryan was severely physically disabled and required a power wheelchair to get around, Greg did not bring up the topic of disability at all. The other children talked about similarities between themselves and their friends and when they did talk about differences, they referred to them as having *different ways of doing the same thing*. For example, one of the twins in preschool talked about how a child in his class could swim just like everyone else, with the help of a special lift to get into the pool. One of the older children also described how most games could be adapted so that her friends with disabilities could play too. She said that she liked the challenge of finding new ways to play the same old game.

Children’s understanding of disability. The first theme that emerged was children’s understanding of various types of disability. A range of special needs was reported by the children when they were asked during their interviews both before and after, “what does it mean to have special needs.” Based on the transcripts of the interviews, it was found that 75% of the children identified physical impairments or visible disabilities, and 15% mentioned sensory impairments (being blind or deaf) and finally 10% identified intellectual impairments. The first code that emerged under the theme of children’s understanding of disability was: *difficulty understanding intellectual or learning disabilities*. When children were prompted to think about children at their school who had difficulty learning, they mentioned that some of the children in their class took longer to complete assignments or needed various learning aides (Dynavox, computer etc.). However, they were apprehensive to refer to this as a disability or as someone having special needs. Instead, it was evident that the children identified disability as something physical. The children often referred to *physical markers of disability* such as a wheelchair, a walking stick or a walker. Interestingly, when children brought up severity of disability, they used motor function to quantify the severity. For example, one 10 year-old boy said that “his is worse because he can’t push his own wheelchair.” Thus, they seemed to have an easier time comprehending disabilities that were visually easy to identify.

Empathy and helpfulness. The last theme, empathy and helpfulness, was one that emerged quite often in the interviews. Particularly when the children were prompted to answer what they enjoyed about their experience as an RI student, many of the children attested to *feeling good about helping*. One child talked about how she would come into her classroom in her old school and just wait for the teacher to talk, however in the reverse integration program she felt like she had a purpose when she came into class and would start off her morning by asking her friends with disabilities if they needed help. This particular child seemed to have an *increased self-confidence from helping*, as she indicated that she felt like she was good and useful in her class and that it gave her a job to do that she felt good about. The children gave various examples of helping their classmates and teacher, such as writing in their friends with disabilities' agenda's, helping to push their wheelchairs in the hallway, helping their friends to reach books or various objects, helping to transfer them from one place to another and helping them to transcribe their oral answers on to paper. Under the same theme, the children expressed an *enjoyment of no bullying*. It was felt as though the children help one another and do not tease or bully each other as much as children in other schools do. The children also manifested that there were *feelings of amicableness between the grades.* One child said that he liked helping out the younger kids who looked up to him. He was often observed on the playground playing with the younger children, teaching them games and chasing them. When the typically developing children spoke about their previous school, they said that in their old schools the younger and older children rarely hung out. Examples of the themes and codes are displayed in Table 1.

Table 1

Emergent Themes and Codes with Examples of Each

Theme	Example
Reason for being friends with a child with disabilities.	
- Shared experiences	"*Jared* is my friend and I'm happy he's my friend because we bumped into each other on the weekend."
- Positive character traits	Ok let's start with *Marcus*. He's a very good kid. We help each other in class. If *Michael* is hurting me *Marcus* would go to get somebody. The same with *Steven*. *Craig* is dependable. Let's say *Simon* needed help and his walker fell if *Craig* was in his wheelchair he would pick it up. *Craig* has lots of humor. *Jessica* is fun to play with let's say soccer is five on five me, *Michael, Marcus, Craig and Steven* on one side and *Victoria* is still out she would go with the kids who respect her.
Similarities and differences between people with and without disabilities	
- Similarities	"There's really no difference even though they need to do more things with other people but they are regular they use a wheelchair but I don't so we're the same."
- Different way of doing the same thing	"Yeah they can do the same things but in a different way."
Understanding disability	
- Physical markers of disability	"Handicapped means to have a disability. *Jay's* is not as bad as *Jean-Paul* and *Stephano's* because he can use his legs. He has a walker."

Theme	Example
- difficulty understanding intellectual difficulties and learning disabilities	"It means that they aren't very smart, it maybe takes a little bit longer to get it in their head. And if their studying words for the test the next day they might need a week or so to do it because they might not get it at the same time as we would."
Empathy and helpfulness	
- Feeling good for helping	"Everybody is not mean to anybody else and it's just a different atmosphere than my other school. You had uniform but here you can wear whatever you want and it's different because you are able to help kids with special needs and at the other school you didn't have anybody you just kind of walked in and sat down you didn't get to help anybody else and when you help somebody else it feels really really good so.."
- Increased self confidence from helping	"It makes me feel like a better person when I help Stefania, she likes it and i feel good inside."
- The enjoyment of no bullying	"Um I like the feeling of the teachers and the people that are here. I like it how whenever you need help they would help you even more and the kids aren't mean like at other schools but their really nice and I just get to be myself and everybody gets along well."
- Feelings of amicableness between the grades	"Ya, well this school is little and my other school was big. And the classes are small and my other school had big classes and the people are more friendly with each other like we're friends with the younger grades and the older grades and nobody is like teasing each other and it's actually nice not to hear teasing."

Research Question 2: Why do parents choose to place their children in a reverse integration program and what do they hope that their children gain from the experience?

Parental Questionnaire: The parental questionnaire was analyzed and coded in order to answer research question 2. From the parental questionnaire there were some dominant themes that seemed to re-occur. Many of the parents had heard of the RI program through word of mouth from other families whose children had participated in the reverse integration program. Furthermore, two of the children part of the RI program had a sibling with a disability who was at the school and another one of the children had a cousin who had a disability. These children all fell into the group that had had *high contact* to someone with a disability. When asked what the parents hoped that their children would gain from the reverse integration experience, many parents hoped that their children would gain acceptance, sensitivity, patience, understanding, kindness and a better sense of self. Other parents pointed out that they wanted their children to understand the similarities between people who seem different such as people with different abilities, learning styles or ethnicities. They made statements such as, "people are people." A common theme that emerged was parents wanting their children to have increased self-confidence. They thought that by helping others they could learn to feel better about themselves. One parent wrote that, "our daughter is already very sensitive to others' needs and has much compassion. My hope is that she will develop more self-confidence and independence as she learns to work in a different environment." Many parents wanted their children to learn to be kind to others and to help out their peers, for example parent wrote, "(I wanted him) to realize that academic achievement is not the only way to measure success, to learn to be considerate of others, to be a helper, and to learn patience.” While some parents reported that their children had had a lot of exposure to disability prior to entering the program, others stated that their children had had no exposure to disability and that they had not discussed the topic of disability with their children prior to coming into the RI program. These children fell into the *low* contact *group.* Interestingly, two of the parents also wrote that they heard that it was a good school and one parent liked that there were smaller classes than other public schools in the city.

Parental Questionnaire Findings. The parents were asked to think about their child’s previous experience with disability before entering into the reverse integration program. They were asked to rank their child’s previous experience with disability as low, medium or high. Most of the typically developing children in the reverse integrated program had had some prior exposure or experience with people with disabilities, however there was a wide range. Based on the parental questionnaires, it was found that the parents of 4 of the children (50%) felt that their children had had high exposure to someone with a disability prior to entering into the RI program, the parents of one child (12.5%) found that their child had had medium exposure to someone with a disability, and the parents of 3 of the children (37.5%) felt that their children had had low exposure to someone with a disability.

Previous experience with disability. Out of the typically developing children who were part of the RI program, some of them had family and friends with disabilities. Two of the children in the high exposure group had brothers with apraxia of speech. However, one mother described that her son did not view his brother’s apraxia as a “disability in the traditional sense.” Another boy in the high exposure group had a cousin with a trachea and two of the children had a best friend with cerebral palsy. Two of the children in the low exposure group had never been exposed to disability prior to entering the RI program.

Effect of contact on initial ASK-R scores. The typically developing children's "contact level" as rated by their parents (low, medium or high) seemed to be reflected in their initial scores on the ASK-R. The quantitative comparison of their scores, using a paired samples t-test, will be discussed later, however it is important to point out that there were some noticeable discrepancies of contact on their initial ASK-R score that should be discussed. The children whose parents indicated that they felt that their children had had high exposure to disability prior to beginning the program scored higher on the initial attitude measure (M = 90%) than the medium exposure group (M = 67%) and the low exposure group (34.33%). Thus the children who had high prior contact had a high acceptance towards disability score, the children who had medium contact had a medium acceptance towards disability score, and the children who had low contact had a low acceptance towards disability score. This trend, however, dissipated by the end of the year. The children's scores were not as polarized as they were at the beginning of the year according to their contact group (See Figure 3). This result seems to indicate that children's attitudes were positively influenced. After the year integrated in a reverse integrated program, the typically developing children in the high contact (100%), medium contact (94%) and low contact (75.66%) scored averages in the high range (Favazza & Odom, 1996). After a year spent integrated into special education classrooms, all of the typically developing children were in a *high contact* level group.

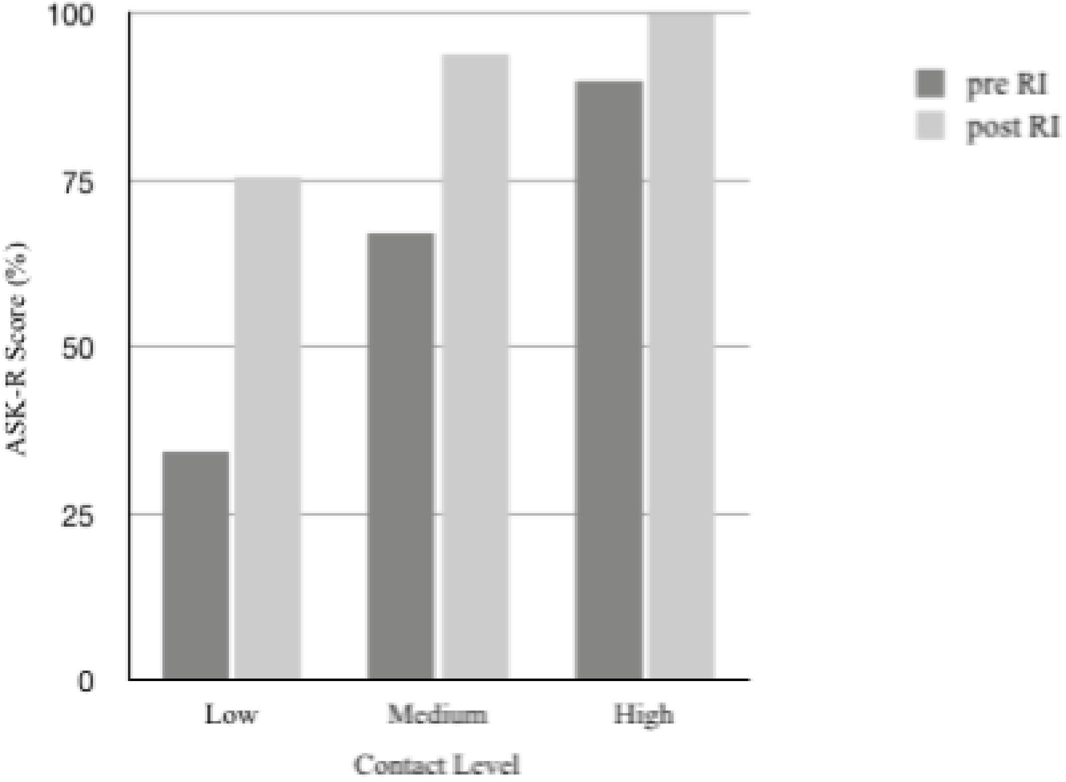

Figure 3. Children's scores on the ASK-R test (percentage) according to their contact group at the beginning and end of the RI program.

Age. Interestingly, the typically developing children in the high contact and the medium contact group were similar in their mean and median age group than the low contact group. The high contact group had a mean age of 8.75 and a median age of 9, the medium contact group had a mean and median age of 9 and the low contact group had a mean group of 5.66 and a median age of 4. Thus, in this particular group of children part of the RI program, the younger children had lower prior exposure to people with disabilities before starting the program. The children's initial ASK-R scores from the first assessment at the beginning of the year seemed to vary according to age. The younger children; ages four to six (42.33%) scored lower than the older children; ages six to eight (88%), eight to ten (65.5%) and ten to twelve (92%). This was true both at the start of the program and at the end, however, the difference was less evident after a year of reverse integration. At the end of the program, the children ages four to six (77.66%) still had a lower ASK-R score than the children ages six to eight (100%), ages eight to ten (94%), and ages ten to twelve (100%), however the mean acceptance towards disability scores of all age groups were all in the high range (Favazza & Odom, 1996).

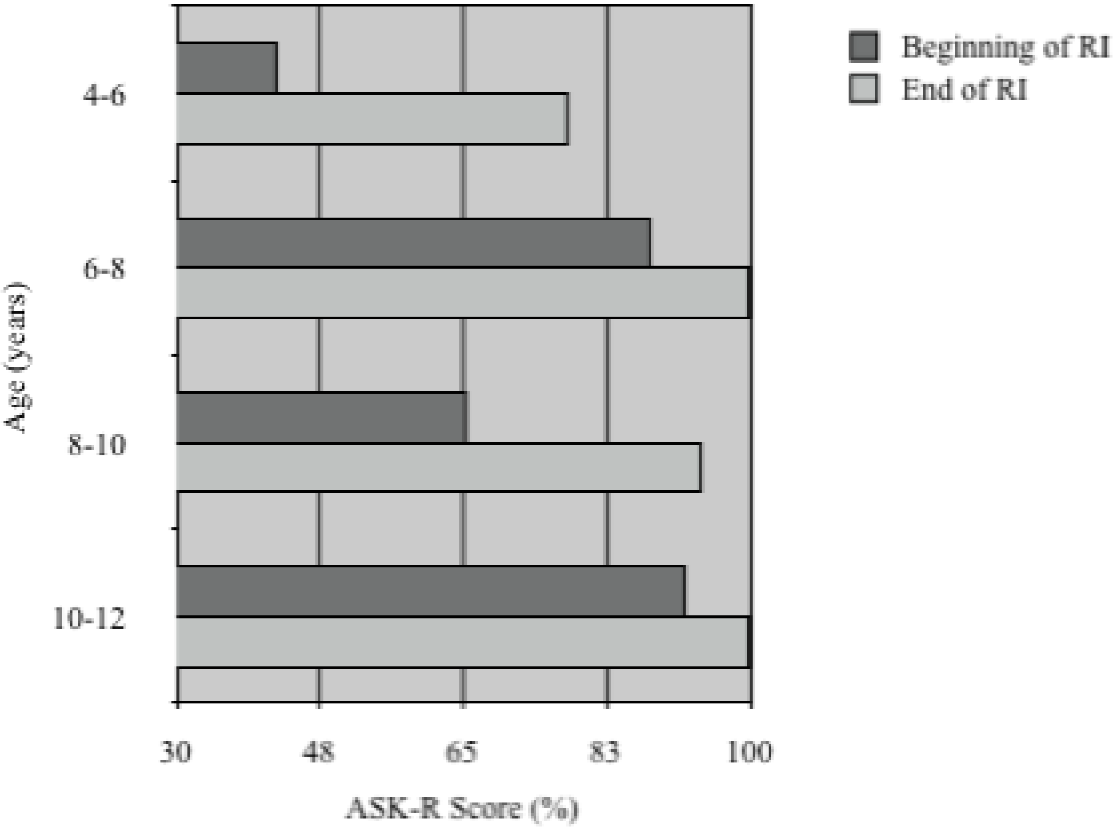

Figure 4. Children’s age and their ASK-R scores both at the beginning and end of the RI program

Quantitative Results

In order to answer the quantitative questions that were used to enhance the qualitative findings, a series of paired samples t-tests and regressions were performed on the data. It is important to keep in mind that the samples used for these tests were small. The following section will recall the quantitative research questions and present the results obtained in relation to the questions.

Question 3. Will children's attitudes towards disability change over time after a year spent in a reverse integrated setting?

Quantitative Data Analysis

In order to assess how children's attitudes towards disability changed, the ASK-R scale was administered both at the beginning and end of the program. Once the tests were administered, they were scored. The first step of the data analysis was scoring the data collected on the attitude measure. On the ASK-R, the scoring of the test followed the guidelines written by Favazza and Odom (1999). To compute a child's total ASK score, 0 was assigned to a non-accepting response, 1 to a neutral response and 2 to an accepting response. The scores of the test could range from 0 to 36, with high scores reflecting accepting attitudes and low scores reflecting non-accepting attitudes. The scores ranging from 0 to 11 indicate low acceptance (0-30.55%), from 12 to 24 indicate moderate acceptance (33.33-66.66%), and from 25 to 36 indicate high acceptance (69.44-100%). Their scores were converted into averages and entered into a computer software program known as the Statistical Package for Social Sciences (SPSS; version 16.0.2, 2007). Descriptive statistics were calculated in order to organize and present the data regarding children's attitudes towards disabilities. Further, paired samples t-tests were performed on the data so that attitude comparisons of these children could be made accross other school contexts. More specifically, these analysis were used to compare children's self-reports of how they would act towards their peers with disabilities before the start of the reverse integration (RI) program (baseline) and at the end of the year after high contact with other children with disabilities (post-program). Additionally, paired samples t-tests were performed on the observational frequencies of interactions between peers with and without disabilities on the school yard. These analysis were used to compare the typically developing children's social interactions (both initiations and acknowledgements) both at the beginning of the first semester at school (baseline) and at the end of the second semester of school (post-program). In short, Pearson product moment correlation analysis were conducted to determine whether relationships exist between children's self-report measures of attitudes towards disabilities and their actual interactions on the playground.

Acceptance Scale Comparison. Prior to conducting the analysis, descriptive statistics were computed and examined in order to provide a picture of the initial scores and behaviours. Means, standard deviations, minimums and maximums of the ASK-R scores are disaplayed in Table 1. Additionally, in order to provide a more complete picture of the types of behaviours and interactions that the children engaged in during the schoolyard observations, the means and standard deviations of the types of behaviours and interactions are displayed in Table 2.

A paired samples t-test was conducted to compare the children's scores on the attitude measure both at the beginning of the school year and at the end of the school year. The scores, which were out of 36, were converted to a percentage to better depict their levels of acceptance. There was a significant difference in the pre scores (*M* = 66.25, *SD* = 30.85) and the post scores (*M* = 90.13, *SD* = 17.24); *t*(7) = 3.49, *p* = < 0.05. As according to the ASK-R scoring system (Favazza & Odom, 1996), four out of eight of the children scored in the high range at the baseline measure and at the post program attitude measure, two children scored in a medium range at the baseline measure and scored in the high range at the post program attitude measure, one child scored in the low range at the baseline and at the medium range at the post program attitude measure and one child scored in the low range at the baseline measure and in the high range at the post program attitude measure. Thus, these results suggest that children's attitudes towards disability were positively influenced towards acceptance after one year in a reverse integrated program. Specifically, these results suggest that the children part of the RI program had more accepting attitudes towards disability at the end of the school year after a year of exposure to children with disabilities.

Table 2

Mean ASK-R Scores at the Beginning and End of the RI Program

				%	*M*
			Pre	66.25	
30.85	17	92			
Post	90.13	17.24	50	100	

Observation frequency comparison between the beginning of the school year and the end. Again, the children's frequency of social interactions were calculated and compared. The frequency of their social interactions with children with disabilities (both initiations and acknowledgements) were summed during each observation and a percentage of social interactions was calculated based on the total possible number of interactions that the children could have engaged in during the 10 minute time frame. During the beginning of the semester, five observations were recorded and an average number of social interactions was calculated as the baseline of their social interactions. Similarly, an average number of social interactions was calculated for the last five interactions taken at the end of the program as a post program measure. A paired samples t-test was conducted to compare the children's average frequency of social interactions with children with disabilities at the beginning of the school year and at the end of the school year. There was a significant difference in the scores at the beginning of the year ($M = 55.63$, $SD = 9.58$) and at the end of the year ($M = 79$, $SD = 4.93$); $t(7) = 7.53$, $p = < 0.001$.

Table 3

Mean Social Interaction Scores at the Beginning (pre) and End (post) of the RI Program

%	*M*	*SD*	Min	Max
Beginning	55.63	9.58	42	70
End	79	4.93	69	83

Research question 4. Is there a relationship between typically developing children's social interactions with children with disabilities and their self-report measures of attitude towards disability after one year in a reverse integrated setting?

Relationship between children’s self-reported attitudes towards disability and their actual interactions with children with disabilities. Finally, in order to investigate research question 4, the relationship between children’s self-reported attitudes towards disability, as measured by their score on the ASK-R measure, as well as the frequency of their social interactions with their peers with disabilities were investigated using Pearson product-moment correlation coefficients. Preliminary analyses were performed to ensure no violation of the assumptions of normality and linearity. First, the children’s self-reported attitude scores (ASK-R) from the beginning of the first semester was compared with their average frequency of social interactions from the beginning of the first semester. There was no correlation between these variables. A scatterplot summarizes the results (Figure 5)

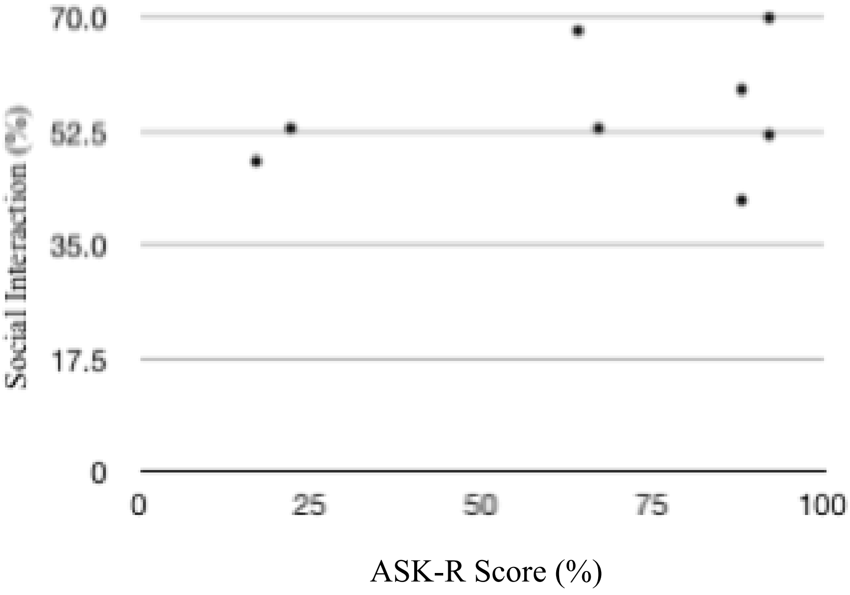

Figure 5. The relationship between RI children’s ASK-R scores (percentage) and their social interactions (percentage) at the beginning of the program.

Relationship between self reported attitudes and actual interactions. Further, the relationship between children's self-reported attitudes towards disability, as measured by their score on the ASK-R measure, as well as the frequency of their social interactions with their peers with disabilities after the reverse integration program was investigated using Pearson product-moment correlation coefficient. Preliminary analysis were performed in order to ensure no violation of the assumptions of normality and linearity. There was a strong positive correlation between the two variables ($r = 0.752$, $N = 8$; $p <.05$), with high levels of attitude scores associated with high levels of social interactions with children with disabilities. A scatterplot summarizes the results (Figure 6)

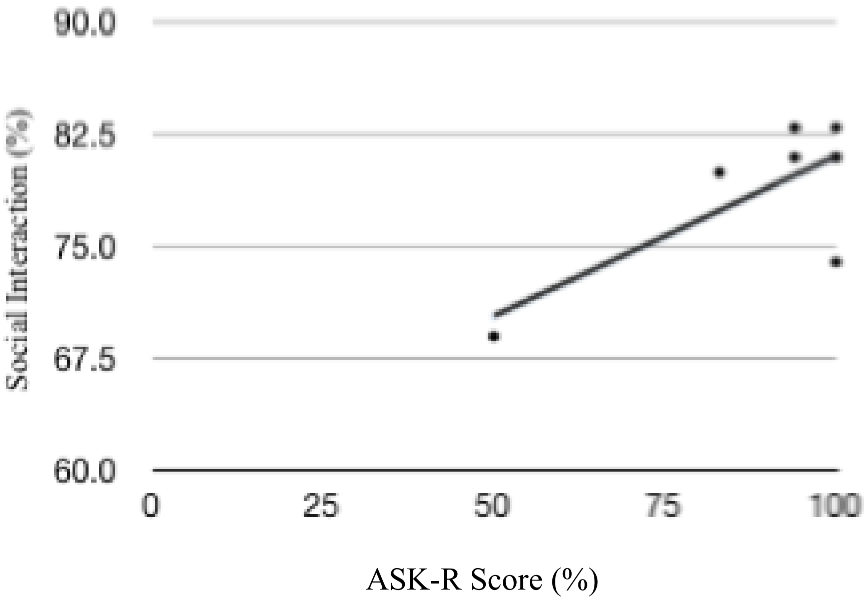

Figure 6. The relationship between RI children's ASK-R scores (percentage) and their program social interactions (percentage) at the end of the program.

Case Study

Creswell (2008) explains that a case study can be useful as a strategy of inquiry in which the researcher explores in-depth a program, event, activity, process, or individual people. In this exploration, the case study method was used to investigate two particular children's experiences in the reverse integration program. The primary researcher looked in depth at their scores on the ASK-R, their observations from semester one and semester two using the EASI-2, and their beginning and end of year questionnaires. Case studies have little generalizations but can be useful as an insight into a child's experience.

In an effort to explore and illustrate some examples of the children's experiences in the program, two children were selected for a more comprehensive analysis. More specifically, the parental questionnaire, pre and post attitude measures, observations, interviews and field notes collected for these participants will be described in an attempt to provide insight into the individual experience in the program and the cognitive, emotional and behavioral affects of the program. These children were selected because they represent differing experiences and outcomes of the project. The children are different in age, previous contact with disability and gender. These children received extreme scores on the initial measure of acceptance towards children with disabilities (ASK-R), with one child scoring extremely low and one child scoring extremely high. Additionally, both of the children formed friendships with children with disabilities that are of interest.

Case # 1: Joshua

Physical description and general impression of the child. Joshua was a young boy who was in Pre School at the time of the data collection. At the initial collection, the child was 4 years and 2 months of age. Joshua had a twin brother who was also part of the RI program and who participated in the study as well. Joshua and his brother Michael, though identical, were easy to spot, as their parents dressed them in differing colours. Joshua always wore blue while Michael wore red. The twins were in the pre-school program at the school alongside other children with mild to moderate intellectual disabilities or language impairments. All of the children in the class were ambulatory however some of the children had motor impairments.

Findings. From both formal and informal observations of Joshua, it was evident that he was a happy boy who was a bit more shy than his brother. Joshua usually wore a wide smile on his face and usually spent most of his time with his twin brother. While Michael was quick to talk about his friends and list the children in his class, Joshua was more reserved and preferred to talk solely about his brother. Through observing the two it seemed as though Michael was the more social of the two. Joshua spent much of his time drawing pictures and chasing after his brother Michael. However, throughout the year his interactions with the other children in his class grew.

Joshua was of interest because he initially scored the lowest on the ASK-R measure. In fact, Joshua and Michael were the youngest participants, and his experience differed vastly from the child in the second case study, who was the oldest participant. All in all, he displayed a variety of different behaviours when he was observed on the playground, which seemed to change throughout the course of the program. Thus, a deeper analysis was conducted.

At the start of the school year Joshua's parents filled out the parental questionnaire about their sons. They believed that Joshua had had low prior exposure with people with disabilities, and they indicated that they had never introduced him to the word or the concept of disability. When asked what they hoped that Joshua would gain from the RI experience, his parents indicated that they hoped he would learn, "understanding of the differences, but most importantly, the similarities between them and others e.g. disabilities, learning styles and ethnicity." They indicated that they chose to enroll Joshua and Michael because the children in the program "get to experience something that teaches compassion and understanding; not to mention that it is an excellent school." Joshua's parents had been told about the nursery school program from a friend of a friend. While Joshua was rated as having had low exposure to disability, it is important to consider that his parents probably have a positive view of disability, seeing that they would place their sons at a school for children with disabilities. That being said, Joshua did score quite low on the initial ASK-R measure.

Compared to the other children in the study, Joshua had the lowest initial ASK-R score. He scored 17% on the initial measure, whereas the average initial ASK-R score was 66%. He indicated that he would not like to be friends with someone in a wheelchair, who is blind, and who is handicapped, nor did he want to play with them, push their wheelchair or sit with them. During his initial interview I sat down with Joshua in a room outside his classroom and sat and talked to him while he drew a picture of his class. He talked about his drawing and about his brother, however when he was probed to talk about the other children in his class, he resisted and he said that he only wanted to talk about his brother. When I asked him if he wanted to be friends with someone in a wheelchair, he shook his head and said, “no! Wheelchairs are weird.”

Throughout the first semester, Joshua was observed playing mostly with his brother Michael. Joshua seemed to be quite physically active, as he spent the majority of his play engaged in chasing games, rough and tumble play or catch with his twin brother. However, he also seemed to enjoy quieter activities when the children had indoor recess. When they played inside he spent most of his time colouring with crayons. At the beginning of the year he did engage in solitary isolation and onlooking behaviours. When his brother was off playing with other children, he stood by himself in the doorway or sit on the floor and watch the other children. However, during the second semester of the program, Joshua was not observed engaging in any solitary isolation behaviors and he was only seen acting aggressively on one occasion, towards his brother. He also spent more time engaged in play with other children in his class, all of whom had some form of disability. More specifically, in the beginning of the first semester Joshua spent an average of 48% of the observed free play time involved in social interactions or play with children with disabilities, whereas at the end of the second semester, 80% of the observed free play time involved in social interactions or play with children with disabilities. While 48% seems high, it is important to consider that less than half of his social behaviours were engaged with children who had a disability, and all of the other children in his class, besides his brother, had some type of disability. Thus, more than half of his social interactions were with his twin brother. Of these interactions, during the first semester 36% of his social interactions were initiations, while 64% were acknowledgements of social interactions made by children with disabilities. Most of these acknowledgements of children with disabilities were brief. At the end of the year, however, he was much more engaged with all of the children in his class and spent most of his social time with his classmates, both engaging and acknowledging the children with disabilities.

At the end of the program Joshua scored much higher on the ASK-R measure. He scored an 83% compared to the group average of 90%. Additionally, he was much more willing to talk about disability in his end of year interview. In fact, he seemed interested in people with disabilities, particularly in their wheelchairs. When asked if he had ever pushed a wheelchair, he indicated that he had not. When I asked him if he wanted to push a wheelchair he said, "Yeah, I wish." Additionally, in his picture he drew a picture of himself in a wheelchair and said, " I have a wheelchair, in my picture" (See Figure 7). Further, when asked if people with disabilities can do the same kinds of things, he talked about how people with disabilities can swim, with help. He also talked about how they get their waterproof chairs into the pool, he said, "they get to push the special button to go up and down."

At the start of the program Joshua was just beginning nursery school and it is likely that his shy demeanor and resistance of social interactions were because he was starting out in an unfamiliar place with new children. However, he did express evident attitudes towards people with disabilities, specifically he said that wheelchairs were weird and indicated that he would not want to play with a child with a disability. At the end of the program, these attitudes had shifted. He was eager to talk about wheelchairs and his classmates who needed extra help in the classroom and outside. His change in attitude is the most evident not only based on his scores but on the way that he talked about the friends in his class both at the beginning and the end of the year.

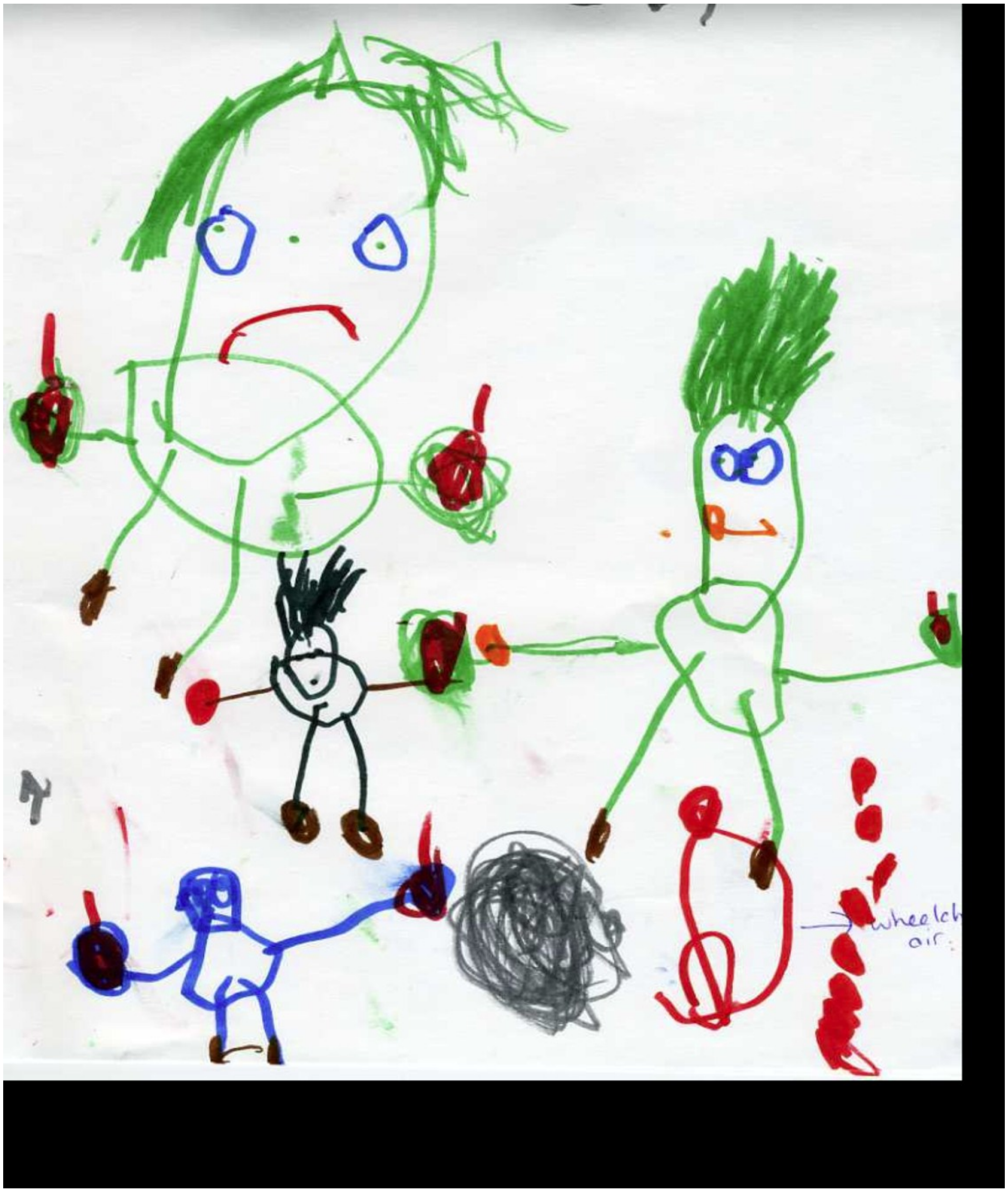

Figure 7. Joshua’s drawing of himself in a wheelchair

Case # 2: Ruby

Physical description and general impression of the child. Ruby was a female student in the fifth grade. At the initial data collection the child was 10 years and 7 months of age. At school she was observed wearing long t-shirts and leggings in bright colours. She commented that one of her favorite aspects of her new school was the lack of uniform and the chance to wear clothes that she felt were an expression of her personality.

Within the context of the school environment, I was able to spend a significant amount of time with this child. The general impression that I developed of this child was that she was a talkative girl with a great compassion for others. When I first met Ruby, I got the impression that her self-esteem was still developing and that she was learning to be comfortable in her own skin. She appeared to be well liked by her peers, and was often observed (informally) interacting with both female and male students during recess.

Findings. This child was of interest for the case study group because she was one of the children whose parents rated her prior exposure to people with disabilities as "high." Ruby first came to the school as a reverse integration student in September of 2011; however, she knew a lot about the program before starting there. In fact, her older sister had been a reverse integration student at the school in the past and had informed Ruby about her positive experience in the program. Ruby's older sister, who was in grade 11 at the time of this study, was still in touch with some of the students that she met in her experience as a reverse integrated student. Thus, Ruby had met many of her sister's friends from the school who happened to have a variety of special needs. When asked about Ruby's previous contact with persons with disabilities, Ruby's parents indicated that she had high previous exposure to someone with a disability previous to entering into the program. Her parents indicated that Ruby had been to many of the school's events as a child and had met many of her sisters' friends with disabilities prior to entering into the program. When Ruby was interviewed at the start of the year she seemed to think that people with disabilities could do many of the same things that everyone else could do. She wrote that, "there's really no difference, even though they need to do more things with other people, but they are regular, they use a wheelchair but I don't, so we're the same really." Ruby scored a 33 out of 36 score on the acceptance scale (ASK-R) at the beginning of the year. This finding is consistent with the Contact Theory (Allport, 1954) in that Ruby who had had high prior exposure to people with disabilities did rate high on the baseline acceptance scale measure. She did, however, attest that she sometimes calls some kids names like dumb. However, in my observations of Ruby over both semesters I did not observe her engaging in any aggressive or name-calling behaviour.

When Ruby's parents were asked about what they hoped their child would gain from the reverse integration program, they responded by saying that, "our daughter is already very sensitive to others' needs and has much compassion. My hope is that she will develop more self-confidence and independence as she learns to work in a different environment." It seemed as though Ruby had a bit lower self-esteem at the start of the year. She walked with her shoulders rounded and her head slightly down. She also expressed that at her old school she had witnessed bullying. When asked her how her old school differed from the reverse integration program, she expressed that, " Yeah well this school is little and my other school was big and the classes are small and my other school had big classes and the people are more friendly with each other like we're friends with the younger grades and the older grades and nobody is like teasing each other and it's actually nice to not hear teasing." It sounded as though Ruby had been teased or had been exposed to a lot of teasing at her old school.

During the first semester of observations, Ruby was observed spending most of her time with a small group of three or four girls either sitting around in a circle on the floor or sitting on chairs chatting. Two of the girls that were part of this group had cerebral palsy, one child, Stephanie, who Ruby later expressed was her best friend, was in a power wheelchair, and the other girl used a walker. Stephanie is a child in the sixth grade who has a mild intellectual disability and a moderate to severe physical disability. The other child that participated in this group was another child who is part of the RI program. Ruby seemed to often be the "leader" of the group as she talked more than the other girls and often came up with the ideas or topics to talk about. Also, Ruby and her best friend Stephanie were often observed talking by themselves and laughing with one another. Ruby and Stephanie frequently got together at each other's houses or met up on the weekend to see movies. At the end of the year during her interview when Ruby was asked what her favorite part of coming to the school was, she said, "Meeting everybody new and meeting Stephanie."

At the end of the year Ruby scored 36 out of 36 on the acceptance scale (ASK-R). More importantly, however, her confidence had seemed to improve. She seemed to walk around with her head slightly higher and she seemed to become friends with more of the children at the school. On several occasions Ruby was observed taking on a "helper" role with the youngest children in the school. More specifically, she would play children's games with the children in grades one and two, she would help to push their wheelchairs or their walkers and she would encourage them to eat all of their lunch during the lunch hour. Interestingly, these “helping” behaviours were only with the younger children. She encouraged her peers with disabilities to do things independently and did not talk to them in a mothering way as she did with the younger children at the school. Additionally, when asked about children in her class who have more difficulty learning, Ruby said that the children have trouble, “catching on when they are reading with everybody else. Sometimes they have a hard time writing so I help them write in their agenda.” She also said, “I write in somebody’s agenda and I help the kids transfer from their chairs to their desk.” Helping out, she said, made her feel good about herself.

However, her “helping” behaviours were different with her friends with disabilities who were in her class compared to her helping behaviours with the younger children. While Ruby would help Stephanie by sometimes pushing her wheelchair or by carrying her lunchbox, she did not seem to “mother” her as she did with the younger children. Interestingly, during the first semester, 70% of Ruby’s interactions on the playground were social, whereas during the second semester, 81% of her interactions were social interactions. However, although she engaged in more social interactions during the second semester, the ratio of initiations versus acknowledgments of social interactions became more equal in the second semester. At the start of the first semester, 68% of her social interactions were social initiations and 32% of them were acknowledgments, however at the end of the semester, 57% of her social interactions were initiations and 43% were acknowledgments. This may be explained by flourishing of her relationship with Stephanie, which really seemed to grow as the year went on. This relationship seemed to be a reciprocal friendship, which was based on shared experiences and their enjoyment of one another. Similar to both Strully and Strully (1985) and Staub et al. (1994), who found that a true or ordinary friendship could occur between a child with a severe disability and a typically developing child, Ruby and Stephanie both thought of one another as best friends.

Thus, although Ruby was in the high contact group before entering into the reverse integration program, the program may have contributed to her positive acceptance. Her acceptance score towards disability did improve, her social interactions increased, and most importantly she made a best friend at the school whom she shared common interests and experiences with, who also happened to have a disability.

Discussion

The above results suggest that the typically developing children in the reverse integration program benefitted from the program where they were informed about disability and encouraged to ask questions, exposed to disability on an everyday basis, and encouraged to interact with children with disabilities in an everyday context. They were encouraged to be hands-on in their classroom and were shown how to use some of the adapted computer devices, and the smartbroard. They were also taught how to push a wheelchair in the *helping hands* program. Thus, all of the components of attitude formation, the affective, cognitive and behavioural aspects, as outlined by Eagly and Chaiken (1993), were all touched upon. Through their personal accounts of their experiences with the program, certain themes were the most common.

Friendships formed between children with and without disabilities

There has been limited qualitative research describing relationships between children with disabilities and their peers. Some research has suggested that friendships between children with and without disabilities are different in nature or atypical of other friendships (Howes, 1983; Hurley-Geffner, 1995). The results do not disprove that atypical relationships exist between children with and without disabilities, however they do support the existence of typical behaviours and friendships between children with and without disabilities. Based on the observation notes, it was found that the children with and without disabilities played together often and engaged in play behaviours that are typical of other children. For example, the most commonly exhibited play behaviours were catch, organized ball games, and rough and tumble games, which were played both by children with and without disabilities. When the children played sports games on the playground, they were aware of the "unfair" advantages that some of the able-bodied students possessed, and often made up rules about either having the typically developing children play on scooters, letting the able-bodied child push the wheelchairs and play in pairs, or letting children who were a bit slower because of their physical disabilities have a head start. Perhaps the reason for the majority of sports and rough and tumble play behaviours was because there were more boys in the study, and boys tend to engage in these types of activities more often.

Strully and Strully (1985) also found that "normal" friendships occur between children with and without disabilities, as they documented a personal account of a friendship between a child with a developmental disability and their typically developing peer. Similar to the friendship described above between Ruby and Stephanie, Strully and

Strully (1985) described this friendship as typical. Both Ruby and Stephanie, a typically developing child in the RI program and her friend who had cerebral palsy, shared similar interests and enjoyed doing similar things. They described getting together for bowling, sleepovers and birthday parties. While Stephanie and Ruby were mostly seen giggling and getting along, they were also seen poking fun of one another, for things like their very different tastes in music, something common in pre-teenage friendships. Staub et al. (1994, reported a case study of friendships between four elementary school children with and without disabilities in an inclusive classroom, where the children had what the researchers called a "normal friendship." More importantly the children with and without disabilities described the dynamics of their friendships, from their own points of view. Interestingly, Stephanie was almost two years older than Ruby, although they seemed to be on a similar intellectual level. While they were two years apart, they seemed to be interested in the same things and seemed to get along on the same intellectual level. It would be interesting to look at children's friendships between children with and without disabilities and to examine whether or not children get along based on intellectual level rather than age level, particularly where the child with a disability has an intellectual disability.

Children's conceptions about disability

Contrary to beliefs that children have undifferentiated views of disabilities, the present study presents a different picture as evidenced by the interviews. After a year of reverse integration, typically developing children as young as 4 years old were able to distinguish between different types of disabilities and had strong opinions about how various disabilities impacted their peers. While the children struggled with understanding the nature of different types of disabilities, after a year in contact with other children with various disabilities, the typically developing children in the RI program seemed to have an understanding of the impact that various disabilities have on people's lives. The children were able to distinguish between different types of disabilities and said things like, "Jason, his disability is worse because he can't push his own wheelchair."

As seen in Ruby's case study, reciprocal friendships between children with and without disabilities are more than possible. Whereas not as many children listed a close friend with a disability at the beginning of the year, in the second round of interviews many of the children indicated that they had a best friend with a disability. For example one of the children said, "Alissa is my best best friend. She is always fun and I just like her for that." In support of Krajewski and Hyder's (2000) results, who found that children without disabilities grew more accepting throughout the year in an inclusive classroom, the typically developing children in the RI program talked more frequently about meaningful friendships with children with special needs at the end of the school year.

Similarities and Differences

The typically developing children in the study compared their typically developing best friends to their friends with disabilities, and interestingly at the end of the year the children who brought up "differences" that existed between their friends, spoke about differences that existed between them as people. For example, they talked about different personality types or different hair colour. Most of the RI children did not bring up the presence of a disability as an existing difference. While some of the children used words like "weird" and "different" to describe children with disabilities at the beginning of the year, at the end of the year they spoke more readily of the different ways that children with disabilities can achieve the same goals. They talked about their assistive devices and equipment as being cool or interesting, and children talked about enjoying getting to help their friends with the equipment or learning to use it themselves. By the end of the year the typically developing children, especially the older children, were fluent on devices such as the Dynavox, which is an assistive communication device, and the smart board, which can help children with disabilities to learn in an interactive manner. They seemed to think that these “different” ways of doing things did not make children with disabilities strange, it only made them interesting. The social model of disability explains that people’s conceptions about disability are socially constructed and that children’s understanding of difference reflects their surrounding environment, which sets limits and restricts people with a disability (Reeve, 2002). According to Otis-WIlborn (1995), classroom environments are a culture of their own that represents values, roles and responsibilities and in order to alter children’s attitudes and knowledge about disability in a positive way, involves pointing out and understanding issues or prejudice and exclusion. Social awareness of disability is imperative because it can broaden children’s schemas and experiences through knowledge (Magiati, Dockrell, & Logotheti, 2002). During the typically developing children’s year as a reverse integration student they are immersed into an environment that promotes diversity and acceptance. Rather than being taught that some children are smarter or better, the teachers influenced the children by teaching them that every child has a unique way of learning, communicating and moving. Thus, the classroom culture embraces difference and the typically developing children’s attitudes towards disability were a reflection of this environment.

Empathy and Helpfulness

Many of the children in the study indicated that their favorite aspect of the school program was having the ability to help out their peers in the classroom. Previous research suggests that peer support within the classroom facilitates social interactions amongst peers with and without disabilities on the school-yard (Longwill & Kleinert, 1998). Although the children's interactions were not observed during class time, the children spoke about their role in the classroom as a helper and how it made them feel. In Longwill and Kleinert (1998), the children or "peer tutors" were taught how to adapt classroom assignments for their disabled classmates. While this study did not systematically observe children adapting assignments, the children were both informally and systematically observed adapting games, activities and using adapted communication devices with their peers. They also spoke in their interviews in June, about helping their classmates to read or to complete assignments in groups. Teaching children how to use adaptations in both games and assignments teaches them to be able to think outside of the box and to be flexible in their interactions. While previous research has looked at typically developing children's helper roles as being uncharacteristic of true friendships (Kishi & Meyer, 1994), the results from this study are not in line with previous research on the topic in that while the children did exhibit *helping behaviours*, the children had a reciprocal friendship outside of the helping behaviours. While helping behaviours were certainly reported, the children talked about their friendships as being reciprocal, and in some of the interviews the children talked about how their friends with disabilities helped them as well. During observations of the children it was noted that the older children acted more “motherly” towards the younger children with disabilities, talking to them in slightly higher pitched voices and helping them to finish up their lunches, whereas the helping behaviours that took place between peers with and without disabilities were more reciprocal and the children talked to one another as equals. For example, Ruby would often tell Stephanie to try to push her own wheelchair or would encourage her to read more often, however Ruby was also observed telling Ruby that she should eat her fruit and vegetables. The girls seemed to look out for one another. As seen in the observations and the interviews, “helping” behaviours do not signify a lack of a true friendship.

Parent Perceptions of Reverse Integration. While there has been research on the topic of academic and social risks of inclusion on typically developing children from a parent perspective, relatively few researchers have delved into the topic of parent opinions pertaining to the possible social and emotional benefits of contact with persons with disabilities on typically developing children. While this study focused on the children who participated in the reverse integration program, there was information gathered from the parents about the program as well. For example, one child said that “He never ever ever bullies me and he always looks out for me on the playground.” It was found that parents seemed to think that the program would have a positive affect on their child’s social/emotional development throughout the course of the program. Parents talked about wanting their children to understand and have exposure to difference, in all forms. Moreover, some parents thought that their children would come to appreciate their own health or well-being and come to feel good about themselves through helping children with special needs. These findings seem in line with the little research that exists on the topic of parent perceptions of inclusion. Giangreco et al. (1993) documented 81 parents' perceptions of their children's experience with inclusion. Over 90% of these parents reported that having a children with disabilities in their child's class had been a positive experience. This study sought to evaluate parent perceptions of the impact of inclusion on their non-disabled child's academic progress, their social/emotional development and the climate and functioning of the classroom. It was found that parents believed that their child's experience with inclusion did not impact their child's academic learning experience. However, 67% of parents reported that their child's overall appreciation of the needs of others had increased and that their understanding of difference among people in terms of appearance and behaviour had increased. Additionally, 29% of parents reported that their child's self-esteem had increased since participating in an inclusive classroom, 12% of parents responded that their child's experience in an inclusive classroom had been neutral, and 1% indicated that the experience had been negative. While the parents that participated in the present study were self selective and probably hold positive or liberal views about people with disabilities, it is interesting that both studies had parents who thought that such a program would have positive social/emotional affects on their children (Giangreco et al., 1993). Thus, there is evidence that some parents see the benefits of having children with and without disabilities working side by side in the classroom.

Contact Theory. Additionally, the above results are in support of Allport's Contact Theory (1954), which posits that contact with people with disabilities can diminish negative stereotypes about disability and increase attitudes towards disability. Based on the parent ratings of initial contact with people with disabilities before the start of the program, their initial attitude scores seemed to correspond with their initial attitude rating in October. The children who were in the low contact group had the lowest average scores, the child who was in the medium contact group had a score that was close to the mean of all of the scores and the children in the high contact group had the highest attitude scores. However, this trend dissipated throughout the course of exposure in the program. One can assume that this was because after a year in a reverse integration program, with constant contact with people with disabilities, the typically developing children in the reverse integration program were all in the high contact group and thus all scored high on the acceptance towards disability measure (ASK-R). Thus, after a year of exposure, both in the classroom and on the playground, their attitudes seemed to shift. At the time of their second attitude assessment, most of the children scored in the high range, as according to the ASK-R grading schema. Only one child, Joshua's twin brother, scored in the moderate range at the end of the program, however he scored in the low range at the start of the program. Out of the eight children in the study, seven of the children's were in the high attitude range. Their initial contact groups, as rated by their parents at the start of the program, no longer seemed to indicate their attitude because they had all had a year's worth of contact with people with disabilities and would all fall into a high contact group if they were rated again. Therefore, the reverse integration program findings seemed to support the contact theory, that contact with people with disabilities positively effects children's attitudes towards disability.

Relationship between children's attitudes and their social interactions. Along the lines of the Theory of Planned Behaviour, which was put forth by Ajzen and Madden in 1986, children's attitudes to interact with a child with a disability depended on what they knew and understood about disability, and these attitudes, paired with the behavioural intentions that the children reported on the acceptance measure, predicted children's behavioural interactions with their peers with disabilities (Laws & Kelly, 2005). The Theory of Planned Behaviour is comprised of three components that predict behaviour: attitude toward the behaviour, subjective norm, and perceived behavioural control. In this case, children's attitudes towards specific interaction possibilities and behaviours were reflected in the questions asked on the attitude measure. Children's attitudes towards the behaviour, or interacting with their friends with special needs, increased after a year in the reverse integration program. Further, the subjective norm was the one put forth by the school which advocated for disability awareness and understanding. Additionally, the teachers in the school allowed the children with and without disabilities to interact and work together at an equal level in all of the classes. Thus, the children are always given " behavioural control" to interact with children with disabilities. According to Ajzen and Madden (1986), all of these components contributed to the mediating factor which was the children's behavioural intentions which predicted their actual behaviour.

The results described above are in support of the Theory of Planned Behaviour (Ajzen & Madden, 1986). The typically developing children in the reverse integrated project not only scored higher on their acceptance towards disability measure at the end of the reverse integration program, their social interactions with children with disabilities also increased. While there was no correlation between their attitude scores and their interactions at the beginning of the year, there was a correlation between their scores at the end of the year. In the beginning of the year it was likely that children's attitudes did not reflect their actions because the children were still new to one another, whereas at the end of the year the children all knew one another and thus a high score on the attitude test was reflected in their social interactions. Additionally, the child who scored the lowest on the attitude measure at the end of the year had the least amount of social interactions at the end of the year. However, he still did make significant improvements on the ASK-R, as well as more social interactions. Similar to the study by Roberts and Smith (1999), it was found that behavioural intentions predict actual positive social interactions initiated by typically developing children towards a child with a disability. Thus children's self-reported intentions of how they said they would interact with their peer with a disability as indicated by the ASK-R acceptance measure was the best predictor of their actual behaviours. Interestingly, at the end of the year, there was not a wide difference between the children's social initiations and acknowledgements, thus the social interactions were reciprocal.

Limitations and Future Directions

Limitations. It is important to consider that there are several limitations to this study. The most evident limitation is the sample size. The sample population of interest was limited to the 12 children who are part of this unique reverse integration program. Out of the 12 reverse integrated children, 8 children and families volunteered to take part of the study. This small sample size allowed for valuable descriptive information and a thorough qualitative analysis of the children. However, in order to conduct a more powerful statistical analysis, a larger sample size would have been beneficial. Further, there was no official control group of children used. The children's post program scores were compared against their own pre program scores. Future research might compare reverse integrated children with children in a school without an inclusive program as a control group, the children in both group's attitudes towards disability after the duration of the year.

This was a purposive sample of children in a unique program, meaning that the children were sampled with a purpose or a small specific group in mind. The children who choose to be a part of the program do not represent an average sample of children. Children and families who are drawn to such a program likely have pre-conceived notions about disability and most likely view disability positively. Although the researcher compared children's initial previous contact with disability, it is impossible to control for all previous notions about disability. Thus, the generalizability of the findings across other school programs or groups of children is somewhat limited. Moreover, the case study looked at existing friendships between children with and without disabilities. One cannot generalize the findings to other existing friendships.

Additionally, the sample size of the project was very small. This should be considered when interpreting the quantitative data. Especially in the case of the Pearson product correlation regression, the results would have been more generalize-able had there been a bigger sample to compare. Regardless, it is evident that as the typically children's acceptance scores increased, the frequency of their observations increased as well. For this particular sample size, the descriptive statistics were the most informative. Thus looking at the means and standard deviations of the scores and observations before and after the program is the most telling way of interpreting the results.

Moreover, due to time constraints and the scope of the study, the researcher was only able to conduct ten observations per child (five at the beginning of the first semester, and five at the end of the second semester). More observations would have provided a more complete picture of each child. Although precautions were taken in order to ensure the validity of the observations, it would have been ideal to observe each child at least ten times per semester. This would have allowed for a deeper comparison of the children's behaviours. However, the researcher was careful to systematically conduct the observations, making sure that the same amount of time elapsed in between each child's observations. The researcher observed the baseline observations in October and November and observed the post program interactions in May and early June. Thus, the researcher was able to capture data from quite early in the semester and was able to collect data until the end of the program in early June.

Although the researcher spent time volunteering at the school for two months prior to conducting observations, there may have been observer effects on the children. The researcher was careful to sit on the sidelines of the gym or of the playground in order to stay out of the way of the children and to minimize observation affects. Attempts were also made to keep sufficient distance between the researcher and the child of interest while remaining in close enough proximity to accurately observe the behaviours. Additionally, all of the children were aware that the observations would be conducted, thus the presence of the researcher may have impacted how the children interacted with one another. The researcher tried to remain inconspicuous during the observation, however at times the observations were interrupted by curious children or children who knew the researcher and wanted to talk. Additionally, observations on the playground are chaotic in nature and filled with distractions. At times it was unclear what the children were talking about. The playground is large and many children occupy the play structure at once. When observing the children, the researcher, at times, had difficulty capturing details about the nature of observations. It is important to consider that at many times the tone of voice and the verbal interactions were not recorded. Thus, while the behaviours were all coded, the nature of an interaction could have been better understood with access to verbal cues. For example, rough and tumble interactions were hard to distinguish from aggressive interactions. The researcher looked for facial expressions and some verbal information in order to make a distinction between the two. It should be noted that at times these behaviours can be easily confused (Pellegrini, 1987). The researcher tried to give the child space and for these reasons it is possible that subtle behaviours, facial expressions and occurrences of eye contact were missed. One way to address these methodological issues would be to use an audio-visual recording technique to capture the intricacies of the children's interactions. Audio-visual recording techniques have been used in the past to record children's social interactions on the playground and may be beneficial for future research in this area. However, it is important to consider that this approach may be more invasive for the child. Videotaping would be useful a useful method to employ in future studies looking at the nature of children's play between peers with and without disabilities. The researcher tried to get as close to the children as possible without interrupting their play. Additionally, the children met with the researcher during the interviews to talk about which of the children they considered to be their true friends. Thus, the observations were only a small part of the whole picture of the relationships formed between the children with and without disabilities.

Furthermore, understanding of children's attitudes towards disability was based on their scores on the ASK-R measure. Because this is a self-report measure, it is important to consider that the responses may have been given to please the examiner or the children may have responded in ways that seemed socially acceptable. For this reason, the measure was coupled with the use of behavioral observations of all of the children at play to see if there was a correspondence between their scores and their behaviours.

Recommendations for future research. Due to the scope of the study, teacher forms and interviews were not employed. Future research could use teacher ratings on children's attitudes towards disability and on the peer interactions between children with and without disabilities in the class, in order to further triangulate the findings. Additionally, interviews with the teachers and parents at the end of the year would have provided invaluable information about the experience. Future research might consider these options.

Overall, this study provided important information about how children conceptualize and make sense of disability. The findings, however, are not generalizable to other children or programs because of the unique nature of the project, the absence of a control group, and the small sample size. Because of the intensive nature of the integration program and the fact that in this program, the typically developing children were no longer the "norm" in their school so to speak, findings cannot be generalized to all-inclusive programs. Additional research is necessary in order to establish if similar findings occur from as a result of inclusive programs.

This study is one of the first to explore and examine typically developing children's attitudes from their own points of view about disability after a year of exposure to children with special needs. There is a need for larger scale investigations about both children’s conceptualizations about disability and how their attitudes affect their interactions with their peers with special needs. Additionally, there is need for more qualitative research on children at different ages and how they make sense of and understand disability. For example, it would be interesting to conduct focus groups with different ages of children and hear them discuss and make sense of disability, inclusion, and difference in general. It would be useful to conduct focus groups both with and without children with special needs; empowering children with special needs to talk about their disability and to have them talk with their peers about bullying and disability stereotypes. It would also be interesting to talk to graduates from the reverse integration program to see how the experience has impacted their life later on. Finally, future research might consider asking what the long-term implications of a participating in a reverse integration program.

Implications

While there are several limitations to this study, there are some important implications of this research. More specifically, this study addresses a gap in the literature that is both children’s conceptualizations about disability, and how their attitudes about disability correspond with their behaviours and interactions towards their peers with disabilities. One notable strength of this particular study is the use of attitude measures and interviews paired with naturalistic observation methodology. All of these measures allowed for a more multi-modal examination of children’s attitudes towards disability. Naturalistic observation and interviews can provide a valuable approach to studying children’s behaviours and social interactions. Compared to a controlled setting, these methods can be generalized to real-life situations. Most importantly, this is the first systematic review of a program that has been in existence for 35 years and has been supported solely on anecdotal evidence.

Additionally, the study used triangulated data from both the children and the parent perspectives. Interviews with the children allowed for introspection into children's thoughts and perspectives about disability and inclusion, which may ultimately influence how we teach children about disability. Observations of the children allowed the for the chance to see how these attitudes played out in real life. Further, parent feedback allowed for a deeper understanding of the experiences that the parents hoped their children would gain from a reverse integration program and the reasons that parents chose to place their children in the program.

Additionally, this study had findings, which may be explained using Contact Theory (Allport, 1954). While this theory was not originally used in conjunction with disability attitude change, it is important for all types of attitude change. The study shows that when children are immersed with children with a variety of abilities and differences, they learn about and come to accept disability. Rather than separating children in the classroom or sheltering children about the details of disability, this study shows that when typically developing children and children with disabilities work side-by-side, they learn from one another. After a year of exposure to people with disabilities, the children pointed out the similarities or the different ways that children with disabilities can achieve the same goals, rather than pointing out the differences between them.

Implications for educators. The information obtained from this review of the program is not only useful in the context of the program, it is useful when planning anti-bias education programs. The qualitative information on children's conceptualizations of disability gathered from this study may help to create curricula pertaining to disability awareness and acceptance in elementary school settings. The majority of research on disability awareness programs has been conducted in high school and university settings in the United States where the teenagers or young adults were familiar with existing definitions and biases associated with the word "disability" (Krahe et al, 2006; Rillotta et al, 2007). Children, however, are still forming their conceptualizations about the term, and likely have their own definitions of disability. It is important to refer to disability in a way that children can understand when educating them about acceptance. Few disability focused intervention programs have been taught to elementary school children. An extensive review of the literature found that there is a lack of research on anti-bias programs and curricula in Canada. Currently there are no specific disability awareness programs in the existing curriculum in the Quebec Education Plan. The curriculum does support, however, supporting the rights of others and reducing stereotypes. Community based providers and teachers can fill this gap and extend their anti-bias curriculum to include awareness about disability.

Therefore, the data may help teachers to have insight into the types of classroom activities that are possible with an inclusive class and how the children themselves can help the teacher to make integrated activities possible. The interviews seem to suggest that children enjoy helping their peers with a disability in the classroom and may even gain increased self-confidence through helping. Thus, teachers can use children to help them out with small tasks such as allowing typically developing children to write in the children with a disability's agendas or allowing them to help push wheelchairs. It seems that typically developing children benefit from helping their friends with disabilities in the classroom and in becoming familiar with their assistive technology and equipment.

Conclusion

To conclude, the aforementioned research pertaining to typically developing children's attitudes towards disability, points to the support of children's multi-faceted systems of beliefs and attitudes, and stresses the benefits of contact or exposure to disabilities, engaging children in discussion about disability, and equal status learning between children with and without disabilities. The study exhibited that after a year of an "inclusive" environment, where children with and without disabilities were celebrated for their differences, that children were less likely to point out dissimilarities between children with and without disabilities, and were more likely to get excited about diversity. Moreover, the children with and without disabilities formed friendships that were reciprocal and often extended outside of the schoolyard. There is evidence, however, that these children still had difficulty understanding intellectual or learning disabilities that were not characterized by physical markers. Thus, children have a harder time conceptualizing these types of disabilities, and disability awareness should be present in the curriculum in the older grades as well. This study was the first to systematically examine a reverse integration program and its affects on typically developing children. A review of the program suggests that the children benefited from the reverse integration program. Further, it is crucial to consider the wider implications of the study on other integration programs and future anti-bias education curricula and the potential role that disability awareness intervention programs can play in facilitating children's attitude formation and actual interactions with their peers with disabilities. This study suggests that there is a need for multi-component disability programs in the formal curriculum to ensure that all children in the classroom are exposed to disability and learn about all of the differences, and more importantly the similarities that exist between people with and without disabilities.

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Appendix A

Concordia University Ethics Committee Letter of Approval

UNIVERSITÉ
Concordia
UNIVERSITY

Department of Education
LB-579
Sir George Williams Campus

To: **Erin Sulla, M.A. Child Study**

From: **Richard Schmid, Chair**

Date: **August 30, 2010**

Re.: **Measuring Children's Attitudes Towards Disability After One Year in a Reverse Integrated Settings**

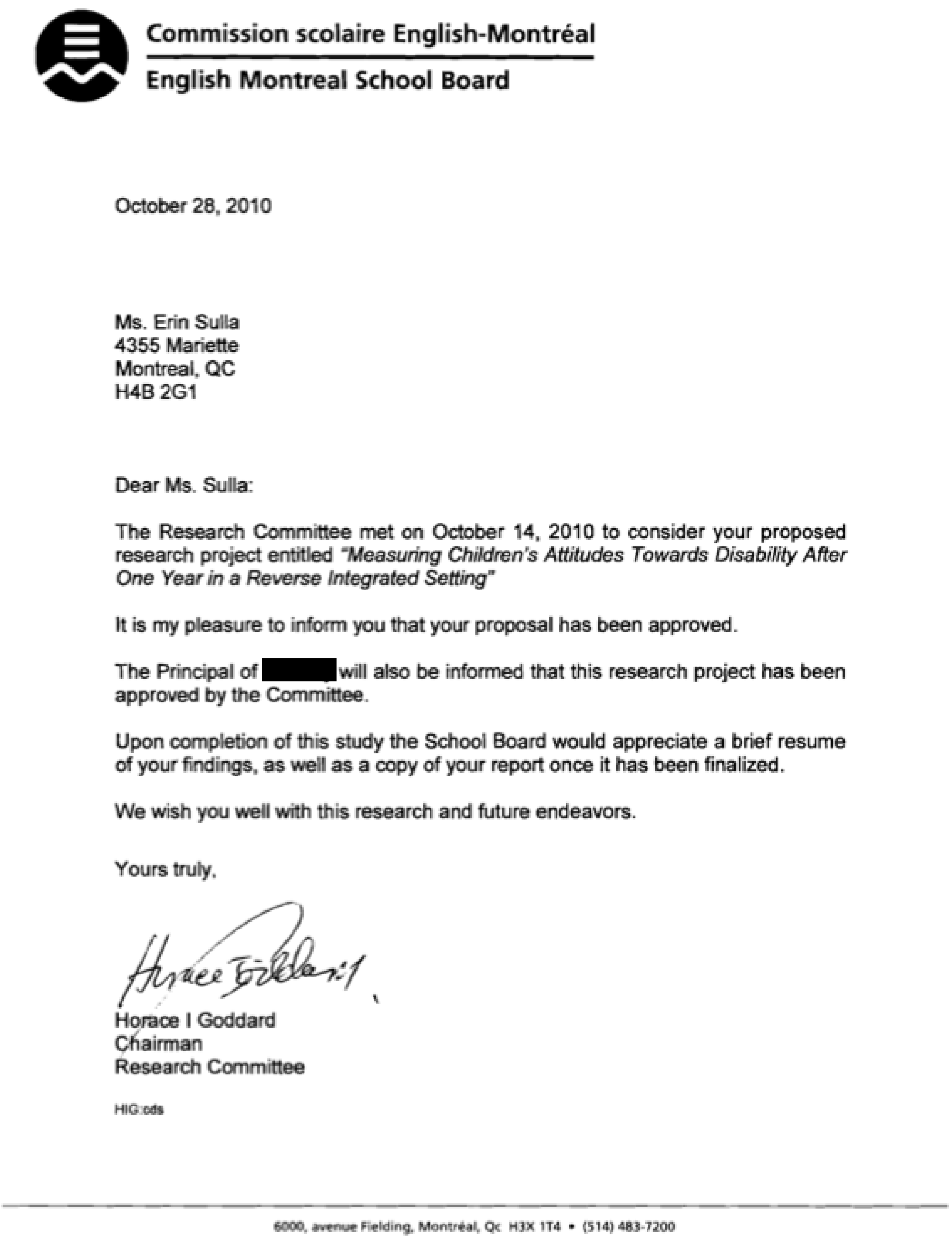
This letter is to inform you that your proposal had successfully passed the scrutiny of the Department's Ethics Committee and has been accepted.

We take this opportunity to wish you every success with this project.

1455 De Maisonneuve Blvd. West, Montreal, Quebec, Canada H3G 1M8 www.concordia.ca

Appendix B

English Montreal School Board Ethics Approval Letter



Commission scolaire English-Montréal
English Montreal School Board

October 28, 2010

Ms. Erin Sulla
4355 Mariette
Montreal, QC
H4B 2G1

Dear Ms. Sulla:

The Research Committee met on October 14, 2010 to consider your proposed research project entitled *"Measuring Children's Attitudes Towards Disability After One Year in a Reverse Integrated Setting"*

It is my pleasure to inform you that your proposal has been approved.

The Principal of [redacted] will also be informed that this research project has been approved by the Committee.

Upon completion of this study the School Board would appreciate a brief resume of your findings, as well as a copy of your report once it has been finalized.

We wish you well with this research and future endeavors.

Yours truly,

Horace Goddard

Horace I Goddard
Chairman
Research Committee

HIG:cds

6000, avenue Fielding, Montréal, Qc H3X 1T4 • (514) 483-7200

Appendix C

Parent Information Letter

UNIVERSITÉ
Concordia
UNIVERSITY

Dear Parent(s)/Guardian(s),

I am currently a graduate student in Child Study (Department of Education) at Concordia University. I have been involved with the rehabilitation centre and the school for many years, first as a camp counselor and later a section head at Camp Massawippi and Camp Viomax, and as a student volunteer at the school. I have always been interested in the reverse integration and the affects on the children that participate. Though there has been an abundance of anecdotal evidence about the success of the program, there has never been a systematic evaluation of children's acceptance towards their peers with special needs, from the start to the finish of the program. I am interested in learning more about the children in the reverse integration program and their understanding and acceptance of their peers with disabilities. This project will focus only on reverse integrated children, whose age's range from 4-10 years of age.

A benefit of this study is to provide teachers, parents, and school administrators with both anecdotal and systematic data pertaining to children's acceptance and understanding of their peers with disability. Ultimately, this study will also provide information for future parents who are looking at the reverse integration program.

Attached to this letter is a consent form, which outlines in greater detail the role your child will play in this study. Please fill out this form and return it in your child's agenda for his or her teacher. If you consent to your child taking part in this study, I will also ask for verbal consent from your child.

Thank you for your consideration. If you have any questions or concerns do not hesitate to contact me at e_su@education.concordia.ca or my supervisor Dr. Miranda D'Amico, at 514-848-2424, Ext. 2040.

Sincerely,

Erin Sulla (M. A. candidate)

Appendix D

Parent Consent Form

UNIVERSITÉ Concordia UNIVERSITY

CONSENT FORM TO PARTICIPATE IN RESEARCH

This is to state that I agree to allow my child to participate in a program of research being conducted by Erin Sulla in the Department of Education at Concordia University, under the direction of Dr. Miranda D'Amico.

A. PURPOSE

I have been informed that the purpose of the present study is to understand how children conceptualize disability and to see if these attitudes change after a year of reverse integration in special education classrooms. The following study is an endeavor to gain a deeper understanding of the intentions of children towards their peers with a disability. The present study aims to evaluate the affects of a reverse integration program on the subsequent attitudes and behaviours of the children part of the RI program rather than children with disabilities.

The information gathered during this project will contribute to existing literature pertaining to children's attitudes towards children with disabilities. Moreover, the information gathered will benefit teachers, parents and future students in the reverse integration program.

B. PROCEDURES

I have been informed that the procedure is the following:

Data collection will take place throughout the academic school year of 2010/2011. A researcher will ask my child sixteen questions pertaining to their acceptance of children with disabilities both at the beginning and end of the academic year. Additionally, a researcher will observe my child for approximately 10 minutes during 4 recess periods, which will be spread out throughout the year. Finally, at the end of the school year, a researcher will sit down with my child and ask them six questions about their year as an RI student, allowing them to express themselves and their feelings about the program.

C. CONDITIONS OF PARTICIPATION

- I understand that I am free to withdraw my child's consent and discontinue my participation at anytime without negative consequences

- I understand that my child's participation in this study is CONFIDENTIAL (I.e., the researcher will know but will not disclose my child's identity). We will only share information with the parent if we suspect the child is unsafe and needs attention or if there is a recommendation for further assessment.

- I understand that the data from this study may be published, but only group findings will be reported. No identifying information will be included in publications.

☐ I HAVE CAREFULLY READ THE ABOVE AND FREELY CONSENT AND VOLUNTARILY AGREE THAT MY CHILD CAN PARTICIPATE IN THIS STUDY.

NAME (Please print) ____

SIGNATURE ____

CHILD'S NAME ____

TELEPHONE NUMBER ____

ADDITIONAL TELEPHONE NUMBER __________________________________

☐ I DO NOT consent for my child to participate in this study.

If at any time you have questions about your rights as a research participant, please contact Adela Reid, Research Ethics and Compliance Officer, Concordia University, at 514-848-2424, Ext. 7481 or by email at AdelaReid@Concordia.ca

Appendix E

Parental Questionnaire

Parental Questionnaire

Your name____

Your relationship to the child____

Your/your spouse' level of education______________________________

Your/your spouse's field of work______________________________________

Please indicate, to the best of your knowledge, the exposure that you think your child has had with a person/persons with a disability.

1) Does your child have any immediate family or friends with a disability?

   ____

2) Does your child know of anyone with a disability?

   ____

3) Would you say that your child has had high/medium/or low exposure to someone with a disability? ☐ high ☐ medium ☐ low

4) Have you spoken to your child about disability?

   ____

5) Can you give a brief description of how you heard about the reverse integration program?

   ____

6) Why did you choose to enroll your child in the reverse integration program?

____

7) What do you hope your children will gain from the reverse integration experience?

____

Appendix F

Student Oral Consent Form

STUDENT ORAL CONSENT FORM

The primary researcher will paraphrase the adult consent form in a way that is consistent with the age of each child (age 4-11 years old). For example, the researcher will say:

> "I am working on a project about your school. I want to know what kids your age think about children who have special needs or are handicapped. Your mom/dad has said that it is okay for you to meet with me. We will meet and I will ask you a few questions about your school and the program that you are in. I will also ask you a few questions about disability. We will be leaving your class to meet as long as it is okay with your parents and your teacher. If you do not want to answer any of the questions you do not have to. Also, if you get tired you can take a break. You can decide that you don't want to be part of the project at any time. Everything that you tell me will be private and will not be told to anyone unless I think that you are not safe and you need help. Then I will have to tell an adult. Do you have any questions about my project?

Do you want to meet with me and talk about the things I told you about?"

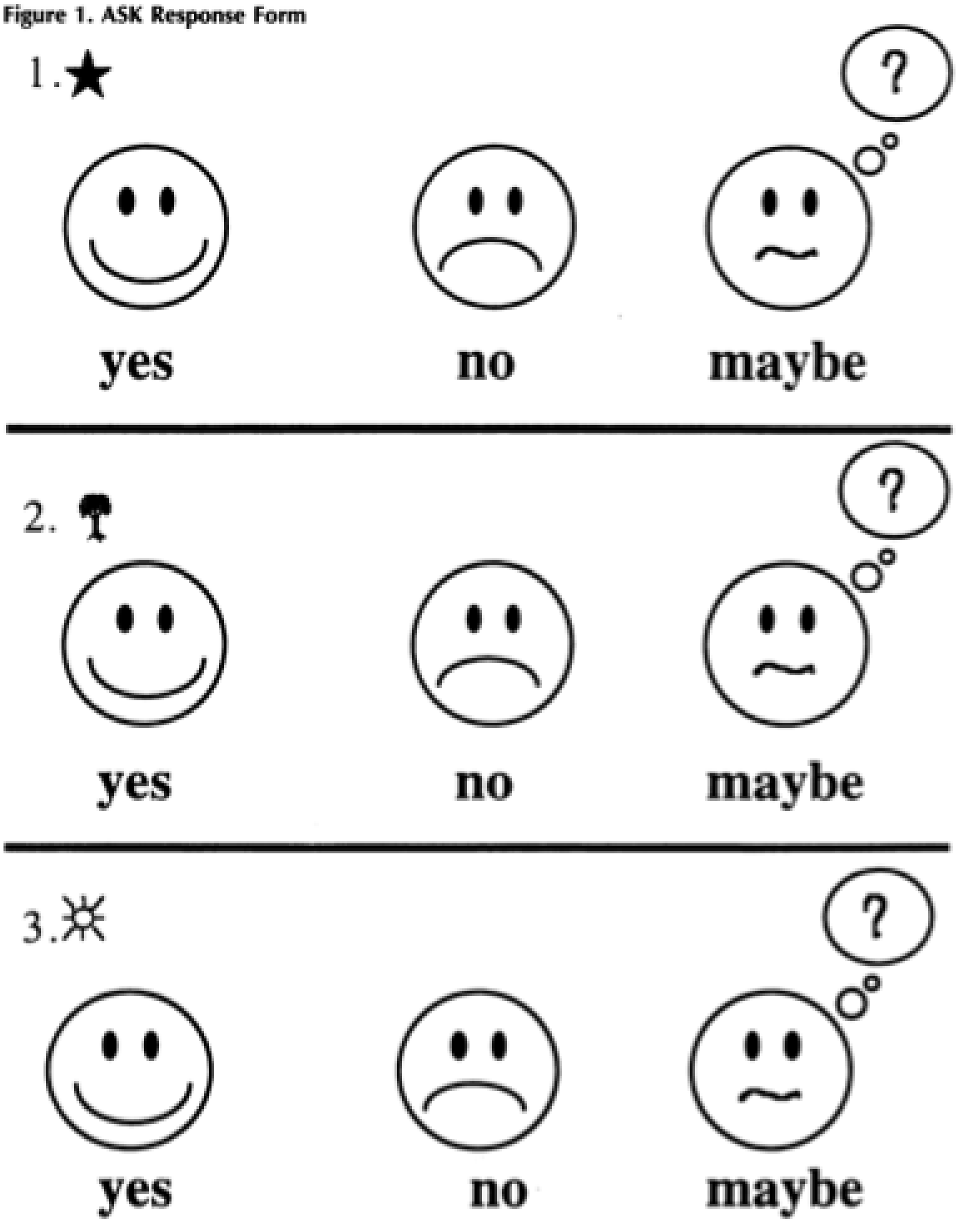
Appendix G

Acceptance Scale for Kindergartners (ASK): Questions & Scale

TABLE 3.
Acceptance Scale for Kindergarten (ASK)

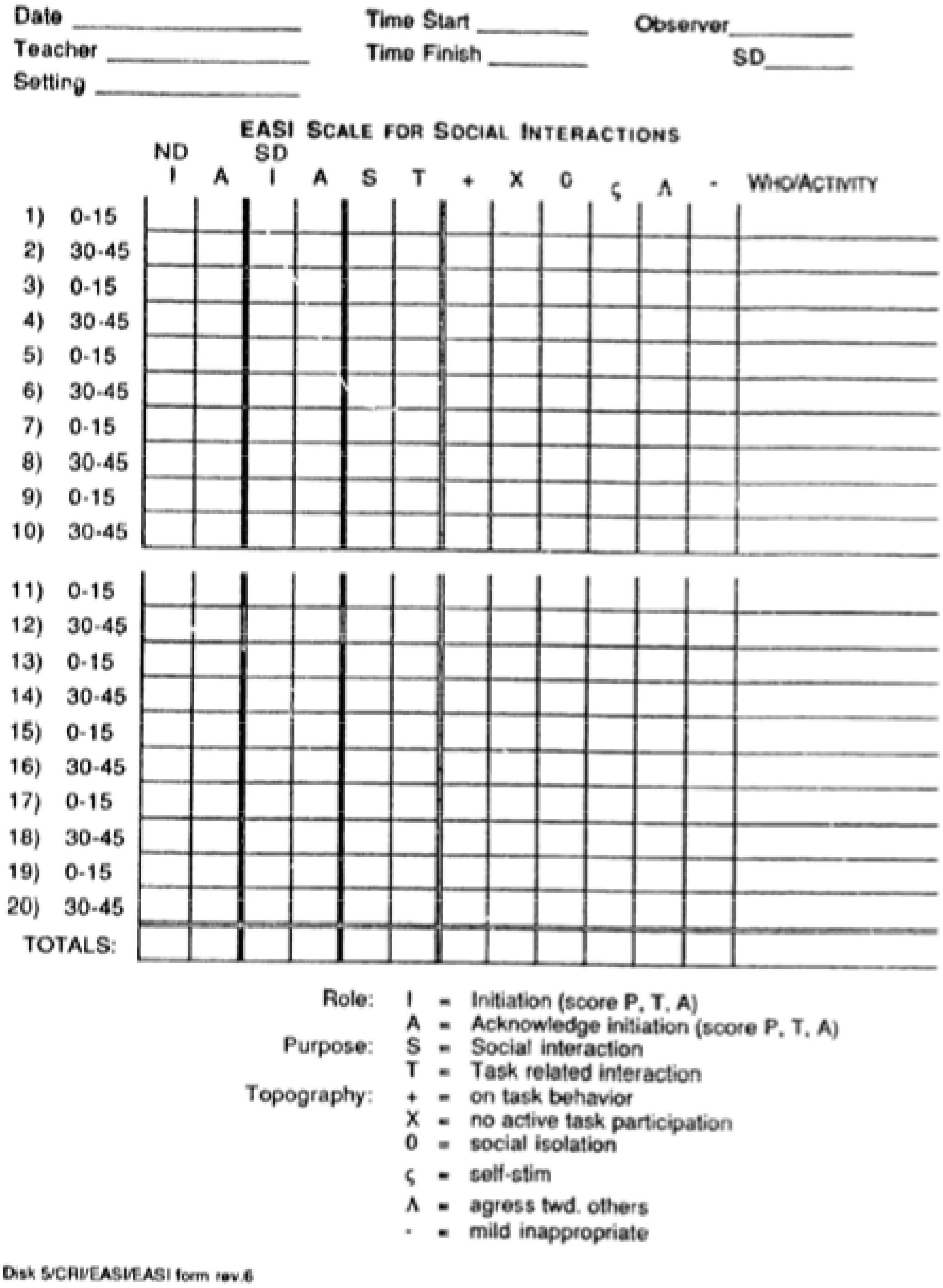
1. Would you like to be good friends with a kid who can't talk yet?
2. Would you like to be good friends with a kid who can't see?
3. Would you like to push a handicapped kid in a wheelchair?
4. Do you play with kids even if they look different?
5. Would you play with a kid, even if he couldn't walk?
6. Would you play with a kid even if he was handicapped?
7. Have you helped someone who is handicapped?
8. Would you still talk to a kid even if he was handicapped?
9. Would you like to play with a handicapped kid?
10. Do you have a friend who is handicapped?
11. Do you sometimes call kids names like "dumb"?
12. Do you play with someone who is handicapped?
13. Have you ever talked to a handicapped kid?
14. Would you move to another chair if a handicapped kid sat next to you?
15. Would you like to be good friends with a handicapped kid?
16. Are you sometimes mean to other kids?
17. Would you like to spend your recess with a handicapped kid?
18. Do you sometimes pick on kids who are different?

Figure 1. ASK Response Form



Appendix H

Educational Assessment of Social Interaction (EASI-2): Observation Sheet



Date ____________ Time Start ________ Observer ________

Teacher ____________ Time Finish ________ SD ______

Setting ____________

EASI SCALE FOR SOCIAL INTERACTIONS

	ND		SD										
	I	A	I	A	S	T	+	X	0	ς	Λ	-	WHO/ACTIVITY
1) 0-15													
2) 30-45													
3) 0-15													
4) 30-45													
5) 0-15													
6) 30-45													
7) 0-15													
8) 30-45													
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17) 0-15													
18) 30-45													
19) 0-15													
20) 30-45													
TOTALS:													

Role: I = Initiation (score P, T, A)
A = Acknowledge initiation (score P, T, A)
Purpose: S = Social interaction
T = Task related interaction
Topography: + = on task behavior
X = no active task participation
0 = social isolation
ς = self-stim
Λ = agress twd. others
- = mild inappropriate

Disk 5/CRI/EASI/EASI form rev.6

Note: The word ND was exchanged for RI and the word SD was omitted. Only the typically developing children in the RI program were observed for initiation and frequency counts.

Appendix I

Interview Protocol

Child Interview Protocol:

1) Can you tell me about your friends in your classroom and about your class?

Possible probes: Who are your best friends in your class? What do you like about these friends?

2) Do you know anyone who looks or acts differently than you?

Possible probes: *What does someone who has special needs look like? How do they act?*

Possible probes: *Can someone in a wheelchair do things on their own?*

3) Do any of your friends need extra help in the classroom?

Possible probes: *Do you know anyone in a wheelchair? Do you know anyone who has trouble learning? What do you like to do with your friends who are handicapped? What makes them your friend?*

4) What do you like the most about this school?

Possible probes: *Were you in another school before this school? How is it different than this school?*

5) Did you like coming to this school this year (omit this question in the initial interview for baseline interview; only ask at the end of the year).