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# Observations of relationships between children with developmental disabilities and peers in inclusive settings

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## Abstract

The importance of social versus functional integration for children with developmental disabilities has been widely discussed in the literature. Although a great deal of research has been conducted to describe the features of relationships and friendships between typical preschool and primary school children, very little research has attempted to apply the same quantitative process to defining the relationships that children with developmental disabilities develop with their peers in inclusive settings. This article discusses the results of research conducted in Alice Springs, Australia, in which playground observations were used to systematically describe the social relationships of 25 children with developmental disabilities with 74 peers in area preschool and primary schools. For each target child, teachers and target children identified three friends or children with whom they interacted most frequently. Observations were conducted over three sessions during recess or lunch times to evaluate the occurrence of key behaviours and interactions most commonly associated with characteristics of relationships and friendships between typically developing children. Results were then examined and compared to interview results to describe the relationships. Analysis indicates that some observations were effective in corroborating interview results for behaviours associated with Companionship and a Regular Friend relationship. In addition most target children were observed to engage in at least some socially appropriate behaviours when interacting with peers. Many target children, however, engaged in social interactions with a large number of peers and did not achieve more intimate levels of interaction such as would be characteristic of a friend or best friend. Although observations were very useful in providing information about the interactions between children and the acceptance of children in play situations, behaviours exhibited were not frequent enough to make definitive judgments about the nature and types of the relationships between children with disabilities and peers.

## Keywords

relationships, inclusive, peers, disabilities, developmental, children, settings, between, observations

## Disciplines

Education | Social and Behavioral Sciences

# **Refereed** Papers

# OBSERVATIONS OF RELATIONSHIPS BETWEEN CHILDREN WITH DEVELOPMENTAL DISABILITIES AND PEERS IN INCLUSIVE SETTINGS

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## ABSTRACT

*The importance of social versus functional integration for children with developmental disabilities has been widely discussed in the literature. Although a great deal of research has been conducted to describe the features of relationships and friendships between typical preschool and primary school children, very little research has attempted to apply the same quantitative process to defining the relationships that children with developmental disabilities develop with their peers in inclusive settings. This paper will discuss the results of research conducted in Alice Springs, Australia, in which playground observations were used to systematically describe the social relationships of 25 children with developmental disabilities with 74 peers in area preschool and primary schools.*

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## INTRODUCTION

Relationships and friendships have long been seen as an important part of a child's school experience (e.g., Ladd, 1990). This aspect of school, however, is of even more importance for children with disabilities and has been cited by parents as being a contributor to their child's overall quality of life (Overton & Rausch, 2002). Unfortunately, children with disabilities, particularly those with developmental disabilities, may have difficulty forming relationships with their peers in inclusive schools (e.g. Hamilton, 2005; Kennedy & Itkonen, 1994). In addition, Hurley-Gefner has (1995) argued that although children with developmental disabilities may have relationships with peers in inclusive settings, these relationships may be different than those between typical children. With this in mind, it would seem imperative that researchers understand the nature of relationships that form between children with developmental disabilities and peers in inclusive schools.

A number of studies (Berndt & Perry, 1986; Gottman, 1983; Mannarino, 1980; Newcomb & Bagwell, 1996) have been devoted to describing the features of relationships between typically developing children and have led to the development and use of interview instruments (e.g. Bukowski, Hoza, & Boivin, 1994; Parker & Asher, 1993) to describe the quality and features of these relationships. In contrast only a handful of studies have been devoted to describing the relationships between children with developmental disabilities and peers. In a review of the literature of social relationships between children with developmental disabilities and peers, Webster and Carter (2007) found that interviews have been the primary method used by researchers to examine the relationships of both children with

disabilities and their typically developing peers. Although a few studies (Heiman, 2000; Kennedy & Itkonen, 1994) have used direct measure to describe some general features of these relationships, none of these were conducted in inclusive settings or described the specific characteristics of relationships of children with developmental disabilities. Although Wiener and Schneider (2002) adapted Parker and Asher's Friendship Quality Questionnaire to examine a relationship between children with learning disabilities and their closest friend, similar questionnaires have only been used in two studies (Bauminger & Kasari, 2000; Chamberlain, Kasari, & Rotherham-Fuller, 2007) to examine very general features of relationships of children with autism. Sociometric surveys have also been utilised either in isolation or along with interview data (Webster & Carter, 2007) to describe social networks of children or popularity status of children with developmental disabilities. The use of these instruments, however, is more a measure of a child's popularity or acceptance within a social network. Furthermore, researchers (Bukowski & Hoza, 1989; Gest, Graham-Bermann, & Hartup, 2001) have argued that sociometric status is a different construct to friendship and that a child's status within a social network is distinct from his/her participation in social relationships and friendships.

In an early study, Rubenstein (1984) proposed that relationships have different functions and have examined the different types of relationships that children form with each other to serve these functions. Although researchers (Cleary, Ray, LoBello, & Zachar, 2002; Furman & Buhrmester, 1985) have extensively examined the different types of relationships between typically developing children and a study conducted by Kerns (2000) utilised quantitative methods to

classify the relationships of preschool children, only a handful of researchers have attempted to classify the relationships of children with developmental disabilities. The main body of research that attempted to look at different types of relationships for children with developmental disabilities came from Meyer, et al (1998) who proposed that children with developmental disabilities may engage in six different types of relationships including three commonly found among typically developing children and three unique to children with developmental disabilities.

Observations have also been used by some researchers although these measures have primarily been employed to examine specific and circumscribed aspects of friendships such as interactions between children and social contacts of children with disabilities. Webster and Carter (2007) found that of the 16 studies that used both interview and observations to examine relationships, however, all but 6 were qualitative studies associated with the work of Meyer et al that employed a range of case study and participatory methodologies. In addition, none of the researchers attempted to compare observations with interview results to determined consistency. Information provided by interview has been the primary strategy used by researchers to evaluate the relationships of children with disabilities in inclusive settings. Nevertheless, such measures are inherently problematic as they reflect only perceptions of relationships. Direct observational measures of behaviours have the potential to provide an additional level of confirmation of interview measures. Thus, the present study was designed to examine the consistency between results in interviews and an observational measure with regard to the dimensions and types of relationships between children with developmental disabilities and peers in inclusive settings.

## METHOD

### Selection of Target Students and Peers

Twenty-five children were selected for the study as they met the criteria of having a developmental disability and receiving ongoing support in an inclusive preschool or primary school. For each of these 25 students, 3 peers were selected by a combination of teacher and student nomination as being the target student's closest friends. In some cases, teachers were unable to select 3 friends and were asked to select the students who most frequently interacted with the target student. One peer moved after the selection process and thus a total of 74 peers were selected for the 25 target students. All target students were assessed using the Vineland Adaptive Behaviour Inventory (Sparrow, Balla, & Cicchetti, 1985) and Social Skills Rating System (Gresham & Elliott, 1990). A mean Adaptive Behaviour Composite of 64.6 (range 42 to 78) was found across all students on The Vineland Adaptive Behaviour Inventory and a group mean standard score of 77.7 (range 54-97) was found for social skills on the Social Skills Rating System.

### Interview Instrument

Interview questions were taken from several interview instruments that had been developed by researchers to assess the quality of friendships between typically developing children. An original set of 40 questions were taken from the Friendship Quality Questionnaire developed by Parker and Asher (1993). In addition, questions were added to reflect the research of Bukowski, Hoza, and Boivin (1994). The dimensions of relationships developed by Parker and Asher (1993) were the foundation for the interview format used in this study. The

remaining questions (approximately 30) were developed from descriptions provided in case study research (Meyer, et al., 1998; Richardson & Schwartz, 1998; Salisbury & Palombaro, 1998) of friendships between children with developmental disabilities and their peers. Two aspects of the instrument are of interest in this analysis. The first is the dimensions of relationships. Relationships were examined to evaluate Companionship, Validation and Caring, Help and Guidance, Intimate Exchange, Conflict, and Conflict Resolution using the structure suggested by Parker and Asher (1993). In addition, types of relationship were considered using the framework provided by Meyer and colleagues (Meyer, et al., 1998). Specifically, relationships were evaluated to determine the extent to which they reflected Best Friend, Regular Friend, Just Another Child, Inclusion Child, I'll Help, and Ghost/ Guest relationship types. For full details see Webster and Carter (In press-a) and Webster (2008)

**Interview procedure**

A 3-point scale ("always", "sometimes", and "never") was used in the interviews. Both target students and peers were interviewed. In addition, as it was understood that some target students might not be able to complete the interview, parent and teachers were also interviewed in order to get the most complete data. A separate score for each dyad was calculated for each of the 4 respondents (target child, peer, teacher, parent), who had a complete data set across all questions relevant to a given dimension. This was accomplished by calculating the mean of the responses to all relevant questions. If an interviewee failed to respond or responded "I don't know" to a relevant question, their data were excluded. To aid in sorting of data into high and low scoring groups, a Mean Interview Score was

then calculated by averaging the individual dimension score across all respondents who had a complete data set. It should be noted that the dyad's score for the I'll Help type of relationship was calculated differently to the remaining dimensions. For I'll Help, a differential was calculated between the mean scores relating to help provided by the target student and by the peer. The Mean Interview Score was based on between 1 and 4 respondent scores, depending on the amount of incomplete data. Thus, in order to evaluate the consistency of respondent scores for each dyad, an average deviation was calculated. A mean average deviation of 0.25 (SD = 0.05, range 0.18 - 0.32) was calculated across all dyads and dimensions in the full interview form and a mean average deviation of 0.25 (SD = 0.05, range 0.18- 0.32) was calculated across all dyads and types of relationships. These data suggest a substantial degree of consistency between respondents. Full detail of the interviews is available from Webster and Carter (In press-a, In press-b) and Webster (2008).

**Observation Instrument**

Observed behaviours were selected for each research question based on the definition of the construct being measured. Behaviours were selected based on their relevance to interview or research questions, as well as for their ability to be observed and measured in a free play setting. For example, the dimension of Companionship is defined as the extent to which children voluntarily spend time together. Interview questions asked respondents about time spent playing together at home and school and time spent talking together. Thus, the behaviours Play Together, Talk Together, and Sit Together were selected to measure Companionship in observation sessions.

Operational definitions for each behaviour were developed from interview questions and descriptions of those behaviours for each corresponding dimension and type of relationship outlined in previous research. A complete list of definitions is provided in Table 1 along with explanation of the measurement and relationship between observation and interview measures. Behaviours recorded during observations were divided into three groups depending on the type of construct measured. The first group of variables focused on the primary activity of the target students and the amount and types of interactions between target students and peers and related directly to dimensions of behaviour. Direct observations of behaviour related to Intimate Exchange would involve observation of very intimate behaviours such as sharing secretes and were therefore not possible using the current observation instrument. The second group of variables recorded during observation sessions was comprised of behaviours that provided more information on the nature of interactions between target students and peers. The last group of variables comprised a group of descriptions that were used to rate the type of relationship that was best typified by interactions between the target student and peers.

**Observation Procedures**

Three observations were planned for each target student on three different days totalling 1 hour of observation. Observations were scheduled during 3 consecutive school weeks and on at least 2 different days of the week. In three cases, observations extended over more than 3 consecutive weeks when a target student was absent. Observations were conducted during times in which the target student had free play or the freedom to choose an activity and play partner(s). Observations for primary school students were conducted during three play sessions including at least one lunch and one recess play period. Observations for preschool students were conducted during three sessions including at least one outside and one inside play session. Each observation was conducted for 20 min, which was divided into four 5-min intervals. Behaviours were coded during observations for interactions between the target student and nominated peers or between the target student and any other peer. As in interview sessions, anecdotal notes were recorded during observation sessions. These notes included data on activities in which the target student engaged during the session, other peers, and general notes on factors that may have had relevance to the observation.

Variables were coded for interactions between a target student and Peer #1, Peer #2, Peer, #3, or any other peer. A code of X was entered for occurrence of behaviours not related to a peer (i.e. play alone). If several peers were involved in the interaction and the behaviour was not obviously directed towards one peer, a code was entered for all peers who were involved in the interaction. If several peers were involved with the target child and the behaviour was not obviously directed towards one peer, codes were recorded for all peers involved. At the end of each observation session in which the target student interacted with a peer, the observer selected the list of behaviours that most applied to the interaction. A relationship type was coded for each observation session in which either the target student or the peer acknowledged the presence of the other. The proportion of intervals in which the relevant behaviour was observed was calculated for each observation category in each of three observations. A mean score for each dyad

Table 1: *Observed Behaviours and Associated Definitions*

| Behaviour and Measurement | Definition |
|---|---|
| *[+]Sit together | Sit together during a mutual activity such as lunch, play, conversation. |
| *[+]Play together | Engage in imaginative, constructive, rough and tumble, game play, etc. in which children interact and work towards a similar goal. Involves mutual (bilateral) turn-taking with each other or group. Interaction may be nonverbal and involve eye contact. |
| *[a]Share things with each other | Give each other food, toys, sports equipment, or other play materials - |
| *[+]Talk to each other | Engage in conversation or verbal/nonverbal exchange in which both children participate. Several exchanges must occur and both children must both initiate and respond to score. |
| *[^]Show enjoyment/ pleasure | Smile, laugh, or otherwise verbally/nonverbally express pleasure while interacting with peer. |
| **[a]Peer sticks up for target child with others | Peer helps child or advocates for him/her in dispute or conflict situation with another child. |
| **[a]Target child sticks up for peer with others | Target child helps peer or advocates for him/her in dispute or conflict situation with another child. |
| **[^]Peer comforts target child | Peer displays physical actions or words that are meant to calm or make target child feel better following conflict with another peer or event that causes target child to become upset. |
| **[^]Target child comforts peer | Target child displays physical actions or words that are meant to calm or make peer feel better following conflict with another peer or event that causes peer to become upset. |
| | Argue or fight – Implies a conflict in which at least one party is upset, frustrated, or angry. |
| **[b]Argue or fight | Implies a conflict in which at least one party is upset, frustrated, or angry. |
| **[c]Resume play after argument or fight | Target child and peer play together following conflict between them. |
| **[a]Target child helps peer | Target child provides practical help to peer. Ex: carries books, helps pick up objects, opens lunch item. |
| **[a]Peer helps target child | Peer provides practical help to target child. Ex: carries books, helps pick up objects, opens lunch item. |
| ***Best Friend | Play together exclusively and/or for majority of time, affectionate, advocate for each other, give things to each other. |

| ***Regular Friend | Play together for some of time and/or with other children, Not as intimate as best friends, but play together on a cooperative basis. Intimacy is developed through communication or interaction over time. |
|---|---|
| ***Just Another Child | Acquaintance, Treat like everyone else, same expectations. Member of a group. Not prolonged interactions with specific peer. Play and/or talk together briefly. Example: one of group playing a game. |
| ***I'll Help | Play predominated by one child helping other child. Peer acts/sounds like a "teacher". Play is dominated by leader/follower play. Example: peer directs child at ballgame, throws ball, prompts throughout game. |
| ***Inclusion Child | Different expectations for performance and behaviour for target child. Special status such as "so cute", "so weird". Treated as younger child. Extra protection or extra nice behaviour towards target child. Example: Allowed ahead of others in line, different level of performance in game. |
| ***Ghost/Guest | Target child is ignored or viewed as outsider. Example: Child is on periphery of play, but not invited to join in. |

*Partial interval recorded at the end of 5 min intervals.
**Partial interval recorded at the end of 20 min session.
***Judgement made as to most prevalent relationship type at end of 20 min session.
[+]Behaviours linked to dimension of Companionship
[^]Behaviours linked to dimension of Validation and Caring
[a]Behaviours linked to dimension of Help and Guidance
[b]Behaviours linked to dimension of Conflict

was calculated for each behaviour across all three observation sessions.

Reliability A second observer was used to obtain reliability ratings for observations. The second observer was present for 33% of the observations or one observation for each target student. A mean reliability rating of 99.5% (98-100%) was calculated across all target students and behaviours. As many behaviours were rarely observed, occurrence reliability was also calculated for the 11 behaviours with less than 100% reliability. Mean occurrence reliability was 90% (range 75 to 98%).

**Results**

As the number of interview questions differed for each dimension (range 4 to 12), a mean of 78.5% of dyads (range 53 to 91%) had interview scores for dimensions of relationships. Table 2 shows the interview scores for the top, middle, and bottom third for each dimension along with the associated observation scores for that dimension for each group. In addition, Pearson correlations were calculated to compare interview and observation scores. Finally, it was of interest to compare the observation results for interactions between target students and the highest ranked peer with that of interactions between target students and non-nominated peers. A t-test comparison was calculated to determine if these results were statistically significant. These results are shown in the last column of Table 2.

Examination of Table 2 reveals that only behaviours associated with Companionship and Validation and Caring were recorded at any frequency across the three 20 min observation session. Remaining behaviours were all recorded at near-zero levels. There was evidence of correspondence between interview and observation scores in Table 2, confirmed by a moderate positive correlation of 0.42 between scores for dyads for the dimension of Companionship. It should be noted that 22 dyads were not observed to interact or acknowledge each other during any observed session. One unexpected observation related to the level of observed interaction between target children and nominated (closest) peers and other peers who were not nominated. As shown in Table 2, the difference in results for these two groups was statistically significant for Companionship and Conflict and approached significance for Validation and Caring and Conflict Resolution. Additionally, anecdotal records indicate that target students typically engaged in these behaviours with an approximately 8-10 non-nominated peers over the three observed sessions.

In Table 3, the number of dyads with the highest interview score for each type of relationship is listed along with the mean observation scores for this group of dyads. Dyads that had equally high scores for two types of relationships are listed in the numbers in column 2 under both types of relationships. A mean of 89.7% dyads (range 84 to 95%) had interview scores for the types of relationships. Although the interview score for I'll Help could not be directly compared with the other types of relationships, 2 dyads did have high scores for this type of relationship with 1 of these dyads also having 1 of the only 2 recorded incidences of I'll Help during observations. With the exception of Regular Friend and Just Another Child, the relationship types were recorded at very low frequency in observed sessions. The Just Another Child Category was most frequently observed in all instances. Excluding this category, there was some limited degree of correspondence between observation and interview score for Regular Friend and I'll Help.

Table 2: *Interview and Observation Scores for Dimensions of Relationships*

| Dimension | Interview | | | Observation | | | Pearson correlation of Interview and Observation Results | T-Test Comparison of Nominated and Non-nominated peer data |
|---|---|---|---|---|---|---|---|---|
| | **Top One-Third** | **Middle One-Third** | **Bottom One-Third** | **Top One-Third** | **Middle One-Third** | **Bottom One-Third** | | |
| Companionship | 2.25 | 1.73 | 1.29 | 0.27 | 0.08 | 0.05 | 0.42 | $t = 3.39$, $df = 24$, $p = 0.002$ |
| Validation and Caring | 2.74 | 2.19 | 1.44 | 0.17 | 0.16 | 0.07 | 0.28 | $t = 1.82$, $df = 24$, $p = 0.08$ |
| Help and Guidance | 2.30 | 1.79 | 1.22 | 0.01 | 0.01 | 0.00 | 0.12 | $t = 0.54$, $df = 24$, $p = 0.59$ |
| Conflict | 1.20 | 1.57 | 2.02 | 0.00 | 0.00 | 0.03 | 0.16 | $t = 3.05$, $df = 24$, $p = 0.005$ |
| Conflict Resolution | 2.59 | 2.11 | 1.50 | 0.00 | 0.05 | 0.00 | -0.002 | $t = 2.00$, $df = 24$, $p = 0.056$ |

Table 3: *Interview and Observation Scores for Types of Relationships*

| Type | Number of Dyads with Highest Type in Interview | M Observation Score Best Friend | M Observation Score Regular Friend | M Observation Score Just Another Child | M Observation Score Inclusion Child | M Observation Score Ghost/Guest | M Observation Score I'll Help |
|---|---|---|---|---|---|---|---|
| Best Friend | 3 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 |
| Regular Friend | 37 | 0.06 | 0.29 | 0.57 | 0.01 | 0.04 | 0.00 |
| Just Another Child | 17 | 0.00 | 0.00 | 0.55 | 0.29 | 0.36 | 0.00 |
| Inclusion Child | 5 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 |
| Ghost/Guest | 14 | 0.00 | 0.06 | 0.83 | 0.00 | 0.00 | 0.04 |
| I'll Help | 2* | 0.00 | 0.17 | 0.59 | 0.00 | 0.00 | 0.25 |

## DISCUSSION

Previous researchers (Freeman & Kasari, 1998; Yugar & Shapiro, 2001) have advocated the use of multiple indices to measure friendships of children with disabilities and peers. With this in mind, the current study employed both interviews and observations. It was originally considered that observation results may be useful corroborating respondents' interview reports on relationships of dyads.

### Dimensions

It could be argued that the use of supplementary data was useful to document some behaviours associated with the dimension of Companionship. For example, many of the children who reported they frequently played together were observed playing together during observation sessions. The higher rate of observation scores for Companionship is probably attributed to the nature of these behaviours. For example, with the exception of those students who spent observation sessions playing by themselves or wandering, the majority of target students were likely to exhibit behaviours linked with Companionship such as Play Together and Talk Together at some time during observation sessions. Nevertheless, it should be noted that the correlation between interview and observation scores was only moderate. There was also some, more limited, evidence of a correspondence between interview scores and observation for Validation and Caring dimension.

Although some data obtained in observations was found to be useful in shedding light on some aspects of relationships and interactions between dyads, the data obtained in observation sessions was of limited use in corroborating interview data for the majority of dimensions of relationships. This was no doubt due to the fact that many relevant behaviours were recorded very infrequently during observation sessions. It is possible that this may have been related to a problem with the design of the observation instrument. For example, the instrument may have failed to measure the behaviour most directly linked to the construct under examination, or more likely, individual constructs examined in interviews (i.e. Validation and Caring, Conflict Resolution) were not easily measured in observable behaviours between dyads during 60 minutes of observation.

The possibility should also be acknowledged that observations were representative of dyads' interactions, but that interview data reflected perceptions of respondents rather than actual behaviour. A more plausible explanation was the low level of occurrence of many of the behaviours. While these behaviours may not have been observed in the selected settings, dyads may have engaged in these behaviours at alternate times or in alternate locations. Thus, it is possible that observations needed to be conducted across a wider range of settings and for longer periods of time to accurately reflect these behaviours.

### Relationships

The use of observations was particularly problematic in verifying the types of relationships. There was very limited evidence of correspondence between observation and interview. In fact, Just Another Child was coded in the vast majority of instances, possibly indicating that observers had difficulty detecting markers of other types of relationships in the observation context and time available. Although there was weak evidence of correspondence between interview and observation data for Regular Friend

and I'll Help, a near complete lack of correspondence was found between observation and interview data for the other types of relationships. These findings may reveal a possible problem in that the use of short periods of observation to attempt to identify a single dominant relationship type. Further, attempts to characterise a relationship as a single relationship type (as has been the case in previous research using these constructs) may not adequately reflect the underlying nature and complexity of the relationship. This is particularly true of characterisations based on observation data such as that reported in past research (Kerns, 2000; Murray-Seegert, 1989) which presented portraits of a dyad's relationship based on specific interactions in a limited time period. Considering overall patterns of positive versus negative or "special" relationships may be more appropriate. In addition, interview results, in which a dyad might have high scores in two or three types of relationships, may be more representative of past research (Salisbury & Palombaro, 1998; Staub, 1998) that indicates that a relationship between two children can change over time as the relationship either develops or wanes. Respondents in interviews would have reflected behaviours they had seen over a period of time, whereas recorders during observation sessions would only be measuring behaviours in a fixed and relatively limited period of time.

**Other Issues**

While observational data was unfortunately of limited use in directly verifying interview data, it did offer some insight into activities in which dyads were involved and how those activities affected the types of relationships. Observations provided data on the number and nature of children with whom target students interacted and corroborated interview data that the majority of target children either engaged in meaningful exchanges of information and constructive play with peers, as typically found in friendships or, at least, interacted with peers as active, equal, and accepted parts of group activities. Observation data suggested that only a small group of target children were given special or differential treatment by peers or were almost virtually ignored by peers. Almost no target students, however, were involved in a relationship with a peer which was typified by one person helping the other.

Some of the most interesting information to come from observations, however, was the data taken on target students' interactions with non-nominated peers. Results for Companionship and Conflict were significantly different for the two groups. Anecdotal records combined with coded data to indicate that target students were often observed to engage in relevant behaviours with peers, but tended to interact with a wide number of peers rather than primarily with nominated peers. This finding is particularly important in that it suggests the need to document not just the behaviours and interactions in which the target student engages, but whom the target student interacts with while demonstrating these behaviours. It also suggests that reliance on interaction data alone may give a false impression of the degree of social inclusion. While peers may engage in substantial interaction, this may not be with consistent partners and may not reflect the formation of deeper relationships and friendship.

**Implications for Practice**

The results of this study highlight several implications for practice particularly for teachers of children with developmental disabilities in preschool and primary

schools. First, observation data was helpful in providing data on some behaviours in which children with disabilities engaged in with their peers, particularly those behaviours associated with Companionship. Observations were poor, however, in providing data on other behaviours associated with relationships and could not even be collected for behaviours associated with Intimate Exchange which is a critical component of closer relationships. In addition, although playground observation data did verify that some social skills and behaviours were exhibited by target students, these behaviours or skills appeared insufficient to allow the classification of the type of relationship in which the dyad was involved. These findings suggest that researchers and teachers should not rely on observation alone, particularly a limited number of observations, when making judgements about relationships that have formed between children and peers.

This contrasts with some previous research (Freeman & Kasari, 2002) where attempts were made to infer that children were involved in friendships simply because they initiated or responded to peer interactions when playing together. It also suggests that children will not necessarily form an intimate relationship merely because they play together on a regular basis. This has important implications given that friendship has been cited as a primary reason for the inclusion of children with developmental disabilities in schools with typically developing peers (TASH, 2000) as the findings of the current study indicate that inclusion alone will not necessarily lead to the formation of friendships. These results also support the findings of some researchers (Hamre-Nietupski, Hendrickson, Nietupski, Sasson, & Shokoohi-Yekta, 1993; Overton & Rausch, 2002) that more intimate relationships must be facilitated rather than

developing just through shared interactions. It is also possible that more extensive observations may provide more information on behaviours such as playing together over time that would be consistent with a Regular Friend or Best Friend.

A second implication for practitioners is that the findings of the current study suggest that high levels of interaction between children with developmental disabilities with typically developing peers may not be an index of the formation of close relationships. While previous researchers have suggested that children need to develop social skills in order to develop relationship (Asher, Parker, & Walker, 1996; Guralnick, Connor, & Hammond, 1995) it would appear that this may be necessary but not sufficient. The results of this study indicate that many children did engage in behaviours such as playing together, sitting with each other and talking together, but tended to do this with a wide variety of people rather than with one or two close playmates of friends. Similarly these findings suggest that researchers should exercise caution in simply looking at behaviours exhibited by children with developmental disabilities, but should also focus on with whom and how many peers they are engaging in these behaviours. Thus, high levels of interaction may reflect the presence of social skills but not be an index of the child's ability to form relationships.

A high number of dyads were recorded as best exhibiting behaviours associated with the Just Another Child relationship and a very low number of behaviours were recorded that would indicate a Best Friend relationship. This data indicates that although intimate relationships could not be assumed based on behaviour demonstrated by target students and peers in observation sessions, it could be argued that many target

children were engaging in behaviours with peers and were not isolated or being given differential treatment. This suggests that target children were experiencing some level of social integration and acceptance of their typically developing peers. Inclusion appears to be resulting in a degree of social acceptance but not social relationships. This implies that teachers may need to develop more strategies to foster closer relationships.

In summary, the data obtained in observation sessions provided some useful information although it failed to directly corroborate much of the interview data as was originally hoped. Some possible explanations for this failure may be problems with the design and comprehensiveness of the observation instrument. More likely, however, is the argument that the poor correspondence between interview and observation data resulted from the very infrequent overall occurrence of recorded behaviours during observation sessions, which was most likely a product of the limited time frame and settings used in observation sessions. In order to add to the completeness of data, observations should be extended in future research to include more settings where interactions between dyads might occur and to cover more lengthy sessions over an extended period of time. Even with the employment of more comprehensive observation sessions, it is also probable that some behaviours may be inherently difficult to observe in a practical time frame. Finally, although it is clear that behavioural verification of interview data is important, more research needs to be conducted in this area and further methods of determining actual rather than perceived behaviours between dyads, which may include the use of observations, needs to be explored.

## REFERENCES

Asher, S. R., Parker, J. G., & Walker, D. L. (1996). Distinguishing friendship from acceptance: Implications for intervention and assessment. In W. M. Bukowski, A. F. Newcomb & W. W. Hartup (Eds.), *The company they keep: Friendship in childhood and adolescence* (pp. 366-405). New York: Cambridge University Press.

Bauminger, N., & Kasari, C. (2000). Loneliness and friendship in high-functioning children with autism. *Child Development, 71*, 447-456.

Berndt, T. J., & Perry, T. J. (1986). Children's perceptions of friendships as supportive relationships. *Developmental Psychology, 22*, 640-648.

Bukowski, W. M., & Hoza, B. (1989). Popularity and friendship: Issues in theory, measurement, and outcome. In T. J. Berndt & G. W. Ladd (Eds.), *Peer Relationships in Child Development* (Vol. 14, pp. 15-45). Oxford: John Wiley and Sons.

Bukowski, W. M., Hoza, B., & Boivin, M. (1994). Measuring friendship quality during pre and early adolescence: The development and psychometric properties of the friendship qualities scale. *Journal of Social and Personal Relationships, 11*, 471-484.

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

Cleary, D. J., Ray, G. E., LoBello, S. G., & Zachar, P. (2002). Children's perceptions of close peer relationships: Quality, congruence, and meta-perceptions. *Child Study Journal, 32*, 179-192.

Freeman, S. F. N., & Kasari, C. (1998). Friendships in children with developmental disabilities. *Early Education and Development, 9*, 341-355.

Freeman, S. F. N., & Kasari, C. (2002). Characteristics and qualities of the play dates of children with Down syndrome: Emerging or true friendships? *American Journal on Mental Retardation, 107*, 16-31.

Furman, W., & Buhrmester, D. (1985). Children's perceptions of the personal relationships in their social networks. *Developmental Psychology, 21*, 1016-1024.

Gest, S. D., Graham-Bermann, S. A., & Hartup, W. W. (2001). Peer experience: Common and unique features of number of friendships, social network centrality, and sociometric status. *Social Development, 10*, 23-40.

Gottman, J. M. (1983). How children become friends. *Monographs for the Society for Research in Child Development, 48*(3, Serial No. 201).

Gresham, F. M., & Elliott, S. N. (1990). *Social Skills Rating System (SSRS)*. Circle Pines, Minnesota: American Guidance Service, Inc.

Guralnick, M. J., Connor, R. T., & Hammond, M. (1995). Parent perspectives of peer relationships and friendships in integrated and specialized programs. *American Journal on Mental Retardation, 99*, 457-476.

Hamilton, D. (2005). An ecobehavioural analysis of interactive engagement of children with developmental disabilities with their peers in inclusive preschools. *International Journal of Disability, Development and Education, 52*(2), 121-137.

Hamre-Nietupski, S., Hendrickson, J., Nietupski, J., Sasson, G., & Shokoohi-Yekta, M. (1993). Perceptions of teachers of students with moderate, severe, or profound disabilities on facilitating friendships with nondisabled peers. *Education and Training in Mental Retardation and Developmental Disabilities, 28*, 111-127.

Heiman, T. (2000). Friendship quality among children in three educational settings. *Journal of Intellectual & Developmental Disability, 25*, 1-12.

Hurley-Geffner, C. M. (1995). Friendships between children with and without developmental disabilities. In R. L. Koegel & L. K. Koegel (Eds.), *Teaching children with autism* (pp. 105-125). Baltimore: Paul H. Brookes.

Kennedy, C. H., & Itkonen, T. (1994). Some effects of regular class participation on the social contacts and social networks of high school students with severe disabilities. *Journal of the Association for Persons with Severe Handicaps, 19*, 1-10.

Kerns, K. A. (2000). Types of preschool friendships. *Personal Relationships, 7*, 311-324.

Ladd, G. W. (1990). Having friends, keeping friends, making friends, and being liked by peers in the classroom: predictors of children's early school adjustment. *Child Development, 61*, 1081-1100.

Mannarino, A. M. (1980). The development of children's friendships. In H. C. Foot, A. P. Chapman & J. R. Smith (Eds.), *Friendship and social relations in children* (pp. 45-63). New York: John Wiley and Sons.

Meyer, L. H., Minondo, S., Fisher, M., Larson, M. J., Dunmore, S., Black, J. W., et al. (1998). Frames of friendship: Social relationships among adolescents with diverse abilities. In L. H. Meyer, H.-S. Park, M. Grenot-Scheyer, I. S. Schwartz & B. Harry (Eds.), *Making friends: The influences of culture and development* (pp. 189-221). Baltimore: Paul H. Brookes.

Murray-Seegert, C. (1989). *Nasty girls, thugs, and humans like us: Social relations between severely disabled and non-disabled students in high school.* Baltimore: Paul H. Brookes.

Newcomb, A. F., & Bagwell, C. L. (1996). The developmental significance of children's friendship relations. In W. M. Bukowski, A. F. Newcomb & W. W. Hartup (Eds.), *The company they keep: Friendship in childhood and adolescence* (pp. 289-321). New York: Cambridge University Press.

Overton, S., & Rausch, J. L. (2002). Peer relationships as support for children with disabilities: An analysis of mothers' goals and indicators for friendship. *Focus on Autism and Other Developmental Disabilities, 17*, 11-20.

Parker, J. G., & Asher, S. R. (1993). Friendship and friendship quality in middle childhood: Links with peer group acceptance and feelings of loneliness and social dissatisfaction. *Developmental Psychology, 29*, 611-621.

Richardson, P., & Schwartz, I. S. (1998). Making friends in preschool: Friendship patterns of young children with disabilities. In L. H. Meyer, H.-S. Park, M. Grenot-Scheyer, I. S. Schwartz & B. Harry (Eds.), *Making friends: The influences of culture and development* (pp. 65-80). Baltimore: Paul H. Brookes.

Rubenstein, J. (1984). Friendship development in normal children: A commentary. In T. Field, J. L. Roopnarine & M. Segal (Eds.), *Friendships in normal and handicapped children* (pp. 125-135). Norwood, NJ: Ablex Publishing Corporation.

Salisbury, C. L., & Palombaro, M. M. (1998). Friends and acquaintances: Evolving relationships in an inclusive elementary school. In L. H. Meyer, H.-S. Park, M. Grenot-Scheyer, I. S. Schwartz & B. Harry (Eds.), *Making friends: The influences of culture and development* (pp. 81-104). Baltimore: Paul H. Brookes.

Sparrow, S. S., Balla, D. A., & Cicchetti, D. V. (1985). *Vineland Adaptive Behavior Scales: Classroom Edition*. Circle Pines, Minnesota: American Guidance Service, Inc.

Staub, D. (1998). *Delicate threads: Friendships between children with and without disabilities*. Bethesda, MD: Woodbine House.

TASH. (2000). TASH Resolution on Inclusive Quality Education. Retrieved 8 July, 2003, from http://www.tash.org/resolutions/res02inclusiveed.htm

Webster, A. A. (2008). *Social Relationships Between Children with Developmental Disabilities and Peers in Inclusive Settings*. Unpublished Doctoral Dissertation

Webster, A. A., & Carter, M. (2007). Social relationships and friendships of children with developmental disabilities: Implications for inclusive settings. A systematic review. *Journal of Intellectual & Developmental Disability, 32*, 200-213.

Webster, A. A., & Carter, M. (In press-a). Adaptation of an interview-based protocol to examine close relationships between children with developmental disabilities and peers. *Australasian Journal of Special Education*.

Webster, A. A., & Carter, M. (In press-b). Characteristics of the closest relationships between children with developmental disabilities and peers in inclusive settings. *Australasian Journal of Special Education*.

Wiener, J., & Schneider, B. H. (2002). A multisource exploration of the friendship patterns of children with and without learning disabilities. *Journal of Abnormal Child Psychology, 30*, 127-141.

Yugar, J. M., & Shapiro, E. S. (2001). Elementary children's school friendship: A comparison of peer assessment methodologies. *School Psychology Review, 30*, 568-585.