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## The social relationships of students with intellectual disabilities in inclusive classrooms

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### Abstract

Social relationships with peers are very important for the development of all children. However, studies show that learners with special educational needs have greater difficulties in forming social relationships with peers than their classmates. However, research data and findings for children with intellectual disabilities (ID) are sparse. The present study investigates the social relationships of 7- to 8-year-old children with ID (n = 35) in inclusive classrooms (first to third year) over the course of one school year. Compared to a sample of matched same-sex classmates without ID with similar social skills (n = 35), the children with ID were less frequently named as playmates and had fewer reciprocal relationships at the end of the school year. There were no differences between children with and without ID in terms of nominations given, reciprocal relationships at the beginning of the school year and stable relationships. The results thus indicate that children with ID and without ID with comparable social skills had a similar number of stable relationships. However, children with ID formed fewer reciprocal relationships than their peers with similar social skills. Both children with IB and children without ID maintained stable reciprocal relationships mostly with same-sex peers (n = 26) who had significantly higher social skills. These findings provide important evidence for the development of strategies to promote social interactions and relationships in inclusive classrooms.

*Keywords:* intellectual disabilities, inclusion, social relationships, friendship stability

### Die sozialen Beziehungen von Schülern mit geistigen Behinderungen in integrativen Klassen

#### Zusammenfassung

Soziale Beziehungen mit Gleichaltrigen sind für die Entwicklung von allen Kindern sehr bedeutsam. Studien zeigen jedoch auf, dass Lernende mit sonderpädagogischem Förderbedarf größere Schwierigkeiten haben soziale Beziehungen mit Gleichaltrigen einzugehen als ihre Mitschülerinnen und Mitschüler. Bezüglich von Kindern mit einer intellektuellen Beeinträchtigung (IB) ist die Befundlage allerdings dünn. Die vorliegende Studie untersucht die sozialen Beziehungen von 7- bis 8-jährigen Kindern mit IB (n = 35) in inklusiven Klassen (erstes bis drittes Schuljahr) über ein Schuljahr hinweg. Verglichen mit einer Stichprobe von

gepaarten gleichgeschlechtlichen Mitschülerinnen und Mitschüler ohne IB mit ähnlichen sozialen Fähigkeiten ( $n = 35$ ) wurden die Kinder mit IB weniger häufig als Spielkameradinnen und Spielkameraden genannt und hatten am Ende des Schuljahres weniger reziproke Beziehungen. Bezüglich der abgegebenen Nominationen, der reziproken Beziehungen zu Beginn des Schuljahres und bezüglich stabiler Beziehungen zeigten sich jedoch keine Unterschiede zwischen Kindern mit und ohne IB. Die Ergebnisse weisen somit darauf hin, dass Kinder mit IB und ohne IB mit vergleichbaren sozialen Fähigkeiten über ähnlich viele stabile Beziehungen verfügen. Kinder mit IB bauten aber weniger reziproke Beziehungen auf als ihre Mitschülerinnen und Mitschüler mit ähnlichen sozialen Fähigkeiten. Sowohl Kinder mit IB als auch Kinder ohne IB pflegten stabile reziproke Beziehungen mehrheitlich mit gleichgeschlechtlichen Gleichaltrigen ( $n = 26$ ), die deutlich höhere soziale Fähigkeiten besaßen. Diese Ergebnisse liefern wichtige Hinweise für die Entwicklung von Strategien zur Förderung von sozialen Interaktionen und Beziehungen in inklusiven Klassen.

Schlagwörter: Intellektuelle Beeinträchtigung, Inklusion, soziale Beziehungen, Freundschaftsstabilität

Social interactions and relationships within the peer group are key contributors to children's socio-emotional development (Gifford-Smith & Brownell, 2003; Newcomb & Bagwell, 1995). If children are involved in frequent positive social interactions with their peers, they have the opportunity to forge close relationships and develop social skills, such as cooperation (Krappmann, 2010; Newcomb & Bagwell, 1995). For children, the classroom is an important context in which to build and to maintain relationships based on shared experiences and interactions (Farmer et al., 2011). Therefore, supporting social interactions and relationships among students is a key aim of school education. It is especially important that students with *special educational needs (SEN)* in inclusive classrooms are supported in their social experiences with peers (Farmer et al., 2019). Researchers emphasize that administrative inclusion alone is not enough to ensure that these students have positive social experiences in mainstream classrooms (Holt et al., 2017; Kasari et al., 2011; Locke et al., 2013). Empirical studies have shown that students with SEN are more often rejected, less accepted by peers, and less included in social interactions with peers compared to

students without SEN (Avramidis et al., 2018; Broomhead, 2019; Huber & Wilbert, 2012; Krawinkel et al., 2017; Krull et al., 2014; Pinto et al., 2019). Research also indicates that students with SEN are less involved in reciprocal relationships than their peers without SEN (Avramidis et al., 2018; Frederickson et al., 2007; Henke et al., 2017; Kasari et al., 2011; Schwab, 2018; Wiener & Schneider, 2002). However, there is also evidence that students with SEN are not less likely to have friends than their peers without SEN (Avramidis, 2010; Grütter et al., 2015). Although researchers claim that students with SEN have difficulties in maintaining social relationships (Petrina et al., 2014), there are few studies that have investigated the stability of the social relationships of students with SEN compared to those of their classmates without SEN in inclusive classrooms (Schwab, 2018; Wiener & Schneider, 2002). Further research is indicated because the results of existing research on the social relationships of students with SEN in inclusive classrooms are inconclusive (Broomhead, 2019).

The heterogeneity of the group of students with SEN has to be considered when undertaking research into the social interactions and relationships of these students (Schürer,

2020; Solish et al., 2010). Their broad range of social and cognitive skills can result in varied social experiences (Gresham & MacMillan, 1997; Schoop-Kasteler & Müller, 2020; Solish et al., 2010). Therefore, a better insight into the social relationships of students with SEN can only be gained by taking the type of SEN into account (Schürer, 2020).

The present study focused on students with *intellectual disabilities (ID)*. A review by Schoop-Kasteler and Müller (2020) revealed that these students face specific challenges in building and maintaining social relationships and there is little research into the close relationships formed by these students (Petrina et al., 2014). This study furthers the understanding of social relationships of students with ID in inclusive classrooms. Because there are few studies that focus specifically on students with ID, the research overview which follows also discusses the social relationships of students with other types of SEN.

### Social relationships of students with SEN

Voluntary reciprocal relationships such as friendships, as opposed to friendly, one-sided relationships, appear early in childhood and play an important role in the development of children's emotional, cognitive, academic, and behavioral functioning (Berndt, 2004; Gifford-Smith & Brownell, 2003; Vitaro et al., 2009). Key characteristics of reciprocal relationships are that peers enjoy spending a significant amount of time doing activities together (Berndt, 2004; Dietrich, 2005; Kuo et al., 2011; Matheson et al., 2007; Monjas et al., 2008) and show a willingness to cooperate with and help each other (Newcomb & Bagwell, 1995).

The social relationships of students with SEN tend to have specific characteristics and they are not obviously reciprocal (Petrina et al., 2014; Rossetti & Keenan, 2018; Schwab, 2018). Although close relationships between students with and without

SEN are possible (Dietrich, 2005; Freeman & Kasari, 2002; Rossetti & Keenan, 2018), these relationships are often unilateral, meaning that students without SEN frequently help and support the students with SEN (Rossetti & Keenan, 2018). There is also evidence that students with SEN choose peers that share similarities (i.e., SEN, gender, age, cognitive skills). Studies show that students with SEN tend to be befriended by other classmates who have SEN (Frostad & Pijl, 2007; Schwab, 2018). Schwab (2018) found that almost one third of fourth grade students with SEN chose other students with SEN as friends. Further et al. (2002) reported that children aged 5 to 11 with Down syndrome were likely to play with peers of the same gender and age. A systematic review by Schoop-Kasteler and Müller (2020) also revealed that students with ID in special needs classrooms appeared to choose friends with similar cognitive skills.

There are a number of reasons why students with SEN may be involved in social interactions and relationships with only a few of their peers. Alongside a reduced level of cognitive skills (Gresham & MacMillan, 1997; Schoop-Kasteler & Müller, 2020), limited social skills are also frequently put forward as a factor contributing to the poor experiences of students with SEN within their peer group (Gresham & MacMillan, 1997; Sarimski, 2019a). For instance, it has been shown that students with autism spectrum disorders lack important communication skills for interacting with peers, which hinders their inclusion in the peer group (Bellini et al., 2007). Sarimski (2019a) also reported that students with Down syndrome displaying prosocial behavior were more likely to experience positive social relationships and interactions with peers. In contrast, a review of the literature by Rossetti and Keenan (2018) showed that opportunities for social interactions are more important for the creation of reciprocal relationships between students with and without SEN than the social skills of the students with SEN. Therefore, the role of the social

skills of students with ID in their involvement in social relationships with peers remains unclear.

### Stability of social relationships

Stability is an important aspect of social relationships (Poulin & Chan, 2010). Building close relationships takes time and for social relationships to have a lasting impact, they have to endure over a period of time. There is, however, a high variance in the stability of relationships in childhood: while some relationships last for years, others end quickly (Chan & Poulin, 2007). Studies show that 25 to 50% of the reciprocal relationships of six- to ten-year old students do not last for more than one school year (Bowker, 2004; Meter & Card, 2016; Poulin & Chan, 2010). It is not clear whether this low stability of student relationships is simply due to their young age. Although some results indicate that the stability of close relationships increases with age (e.g., Poulin & Chan, 2010), most of those reported in the meta-analysis by Meter and Card (2016) did not find evidence for this association between stability and age. However, it should be noted that these results are from a relatively small number of studies. The number of studies involving students with SEN, and specifically with ID, is even smaller.

Studies on the stability of friendships confirm observations that students with SEN have difficulties in maintaining close relationships (Schwab, 2018; Wiener & Schneider, 2002). Some studies have examined the stability of friendships among different types of disability and/or age groups. For instance, Schwab (2018) found that the friendships of fourth and seventh graders with SEN were less stable over a school year than the friendships of students without SEN. Research results from Wiener and Schneider (2002) revealed that students with ID in Grade 4 to 6 were significantly less likely to have stable friendships than students without ID. However, this finding was not confirmed for reciprocal friend-

ships. In sum, students with SEN (and with ID) appear to have fewer stable reciprocal relationships than their peers without SEN, but there is not enough data to draw a conclusion.

### Present study

This study aimed to contribute to the understanding of the social relationships of students with ID in early elementary inclusive classrooms (Grade 1-3) and to provide insight into the stability of their social relationships over a school year. In order to better understand the role of the SEN status and the extent to which ID affects peer relationships in inclusive classrooms, students with ID were compared to classmates without ID but with certain similar characteristics (i.e., gender and social skills). The following research questions were investigated:

1. How do the social relationships of students with ID in inclusive classrooms compare to those of same-gender classmates without ID who have the same social skills?
2. How stable are the social relationships of students with ID in inclusive classrooms compared to those of their same-gender classmates without ID who have the same social skills?
3. What are the characteristics (i.e., gender, social skills, and ID) of those students who are involved in stable reciprocal relationships with students with ID and similar classmates without ID?

## Methods

### Participants and procedure

To answer research questions 1 and 2, 70 students were selected from a sample of  $N = 582$  students (sample<sup>TOT</sup>) enrolled in 42 inclusive elementary classrooms (Grade 1-3) in Switzerland. This selected sample (sample<sup>MATCHED</sup>) comprised 35 matched pairs (matched by grade, classroom, gender, and social skills) of students with and without ID in 29 classes. All participants had written parental consent. Students with ID were included in this study if they had a diagnosis of ID from a licensed psychologist and were enrolled full-time in a regular classroom. In six classes, two students with ID were enrolled per class, in the other classes only one student with ID was enrolled per class. A total of 35 students with ID (63% boys) were included in the study sample<sup>MATCHED</sup>. The average age was 8;7 ( $SD = 8.96$ ) years old and IQs ranged between 42 and 73 ( $M = 61.77$ ,  $SD = 8.83$ ; Table 1). Seven students had IQs between 42 and 50, six students between 52 and 59, 17 students between 62 and 70, and five students had IQs between 72 and 73.

35 peers without ID from the same classroom were matched with the students with ID on grade, classroom, gender, and social skills (see measurement). The students without ID averaged 7;11 ( $SD = 11.17$ ) years old (Table 1). They were significantly younger,  $t(68) = -3.61$ ,  $p < .001$ ,  $r = .40$ , and had significantly higher IQs ( $M = 99.0$ ,  $SD = 13.8$ ) than their classmates with ID,  $t(66) = 13.43$ ,  $p < .001$ ,  $r = .86$ .

To answer research question 3,  $n = 26$  additional students of the sample<sup>TOT</sup>, who were in a stable reciprocal relationship with students of the sample<sup>MATCHED</sup>, were included in the analyses (sample<sup>STABLE</sup>). The students of the sample<sup>STABLE</sup> (58% boys) were on average 8;0 ( $SD = 11.05$ ) years old and had an average IQ of  $M = 98.65$  ( $SD = 15.10$ ).

Trained test administrators collected data on peer nominations and social skills twice

during one school year: in September/October ( $t_1$ ) and May/June ( $t_2$ ). A teacher questionnaire completed at the beginning of the school year was used to collect data on class variables and the ID diagnosis, age, and gender of students. The cognitive abilities of students without ID were assessed at  $t_1$  using a group test.

### Measures

#### Peer nominations

Students were asked to nominate the classmates with whom they played the most. The nominations were not limited by number or gender but restricted to fellow classmates. Using the nominations, four different scores were calculated: indegree, outdegree, interaction partners, and reciprocal nominations. *Indegrees* are nominations received; the score for each student is the total of all nominations received from other classmates. *Outdegrees* are nominations given; the score for a student is the total of all nominations given by him/her. *Interaction partners* were coded as the total number of classmates that were connected to each student by nominations given or received. For example, if student A nominated student B and if student A was nominated by student B and C, student A had two interaction partners, namely B and C. *Reciprocal nominations* were incidences when two students nominated each other as play partners. As sociometric measures depend on the size of the group, all four scores were divided by the number of participants in the class.

#### Stability of interaction partners

The stability of the interaction partners of each student was calculated using the stability index devised by Chan and Poulin (2007), with a range of 0 (no stability) to 1 (perfect stability). The index was calculated by summing the total number of interaction partners that were connected to each student across the two measurement points.

This sum was divided by the total number of interaction partners over both measurement points. For example, if a student A nominated student B at both measurement points and was nominated by student B at the first measurement point and C at the second measurement point, this student had one interaction partner across both measurement points and two interaction partners in total. This would give a stability score of 50%. This approach of assessing stability is more accurate than, for example, studying the change in the numbers of social relationships over time, because the changes in peers' actual identity are considered (Chan & Poulin, 2007).

### *Stability of reciprocal nominations*

The stability of reciprocal nominations was calculated by summing the total number of stable reciprocal nominations per student across the two measurement points. This sum was divided by the number of reciprocal nominations from both measurement points.

### *Social skills*

Social skills were rated by peers (with and without ID) using two questions on the cooperative and prosocial behavior of classmates ( $\alpha = 0.83$ ). All participants estimated on a five-point-scale with smileys (1 = 😞 = "I do not agree at all" to 5 = 😊 = "I totally agree") four randomly selected classmates with respect to how well they could work with them and how helpful they were. Although students without ID ( $M = 3.18$ ,  $SD = 0.6$ ) scored slightly higher in social skills than students with ID ( $M = 3.05$ ,  $SD = 0.81$ ), the two groups did not differ significantly,  $t(68) = 0.73$ ,  $p = .47$ .

### *Cognitive abilities*

The cognitive abilities of the students without ID were assessed with the culture fair test CFT 1-R (Weiß & Osterland, 2012). The IQ scores of the students with ID were re-

trieved from the school records. When this score was not available, the students completed a CFT 1-R (Weiß & Osterland, 2012) or a SON-R (Tellegen, Laros & Petermann, 2007).

### **Analyses**

To answer research questions 1 and 2, students with and without ID (sample<sup>MATCHED</sup>) were compared by running independent sample T-tests on the SPSS platform. Homogeneity of variance was calculated using Levene's test which showed that equal variances could be assumed for all variables except for outdegree at  $t_1$  ( $p = .03$ ) and reciprocal nominations at  $t_2$  ( $p = .04$ ). For these two variables, approximate degrees of freedom were considered. To answer research question 3, T-tests and descriptive analyses were conducted. For this analytic step, the sample involved students of the sample<sup>MATCHED</sup> who had a stable reciprocal relationship and their classmates with whom they had these relationships (sample<sup>STABLE</sup>).

### **Results**

A schematic of a classroom network (Figure 1) provides an overview of student social relationships and their changes over time. The example depicts a classroom network at the beginning ( $t_1$ ) and at the end of the school year ( $t_2$ ) to illustrate the social relationships of a matched pair of students and their stability over time. At  $t_1$ , the girl with ID nominated one classmate, and was nominated by two classmates as a play partner. One of these two nominations was reciprocal. Over the course of the school year, only one of this girl's interaction partners remained stable (a boy). This means that the girl with ID had one stable interaction partner, but no stable reciprocal relationship over the course of a school year.

The girl without ID nominated two classmates at  $t_1$  and was nominated by three classmates. Two of these nominations were

reciprocal. Over the course of a school year, the girl without ID gained two new interaction partners. This girl without ID had one reciprocal relationship at each measurement point, but the relationship was with two different classmates. Thus, while most interaction partners were stable over time, the girl without ID also had no stable reciprocal relationships over the course of a school year.

**Comparison of matched students with and without ID (Research Question 1 and 2)**

First, the social relationships of students with and without ID were compared (Research Question 1). Overall, students with ID had lower values than their matched classmates without ID for most variables (Table 1). The exceptions were outdegree  $t_1$  and interaction partners  $t_1$ . However, T-tests showed that there were no significant differences between students with ID and their matched pairs without ID for variables at  $t_1$ : indegree ( $t[68] = 1.60, p = .12$ ), outdegree ( $t[58.07] = -1.57, p = .12$ ), interaction partners ( $t[68] = -0.41, p = .69$ ), and reciprocal

nominations ( $t[68] = 0.12, p = .90$ ). At  $t_2$ , there were no significant differences between the two groups for outdegree ( $t[68] = 0.17, p = .87$ ) and interaction partners ( $t[68] = 1.43, p = .16$ ). Students with ID only differed significantly from their matched classmates without ID for indegree at  $t_2$  ( $t[68] = 4.17, p < .001$ ), with a medium effect size of  $r = .45$ , and reciprocal nominations at  $t_2$  ( $t[63.65] = 3.16, p = .002$ ), with a medium effect size of  $r = .37$ . In the group of students with ID, the decrease of reciprocal nominations and interaction partners from  $t_1$  to  $t_2$  was not significant,  $t(34) = 1.04, p = .30$  and  $t(34) = 1.1, p = .28$ , respectively. The group of matched students without ID had significantly more reciprocal nominations after a school year ( $t[34] = -3.04, p = .005$ ), with a medium effect size of  $d = .56$ . However, the increase in interaction partners of students without ID over a school year was not significant ( $t[34] = -1.13, p = .27$ ).

Second, the stability of the social relationships of students with ID and their matched classmates was compared (Research Question 2). The comparison revealed that the two groups did not significantly differ with

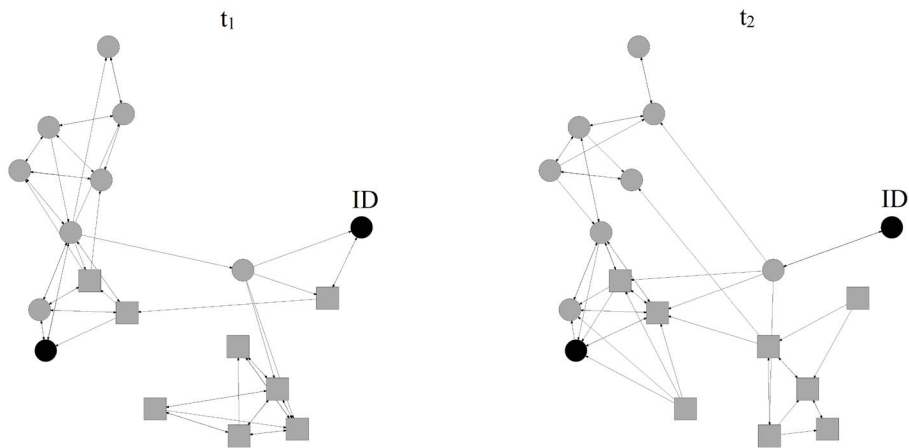


Figure 1. Illustration of a class network (nodes and arrows) at measurement points  $t_1$  and  $t_2$ .

Note. Circles depict girls, squares boys. Blackened nodes are a matched pair of girls. The girl with ID is labeled. Arrows represent play nominations and two-sided arrows represent reciprocal nominations.



respect to the total number of interaction partners ( $t_1$ - $t_2$ ) over a school year ( $t[68] = 0.33, p = .74$ ), the total number of reciprocal nominations ( $t_1$ - $t_2$ ) over a school year ( $t[68] = 1.64, p = .11$ ), stable interaction partners ( $t_1$ - $t_2$ ) over a school year ( $t[68] = 1.02, p = .31$ ), and stable reciprocal nominations ( $t_1$ - $t_2$ ) over a school year ( $t[68] = 1.12, p = .26$ ). In line with these results, no significant differences in the stability index of interaction partners ( $t[68] = 0.73, p = .47$ ) and of reciprocal nominations ( $t[68] = 0.05, p = .96$ ) between students with and without ID were found.

### Stable reciprocal relationships (Research Question 3)

Overall, 54% of the reciprocal relationships of the sample<sup>MATCHED</sup> – 59% in the group of students with ID and 48% in the group of students without ID – remained stable over the school year. While 34% of students with ID ( $n = 12$ ) of the sample<sup>MATCHED</sup> had at least one stable reciprocal relationship ( $max = 2$ ), 43% of the matched peers without ID ( $n = 15$ ) had at least one stable reciprocal relationship

( $max = 3$ ). Some of these 27 students had up to three stable reciprocal relationships. In total, students of the sample<sup>MATCHED</sup> had 32 stable reciprocal relationships, and these were examined more closely.

Stable reciprocal relationships were overwhelmingly formed with students of the same gender (97%). Six out of the 32 stable reciprocal relationships were forged between students of the sample<sup>MATCHED</sup>. This means that few students with ID had stable reciprocal relationships with matched classmates without ID. In one class (out of six classes each enrolling two students with ID), two students with ID had a stable reciprocal relationship with each other.

In a next step, a comparison was made between the 27 students of the sample<sup>MATCHED</sup> with a stable reciprocal relationship and the students with whom they had a stable reciprocal relationship. The students of the sample<sup>STABLE</sup> ( $n = 26$ ) had significantly higher social skills ( $M = 3.84, SD = 0.77$ ) than the matched students both with and without ID ( $M = 3.26, SD = 0.64$ ),  $t(65) = -3.01, p = .004$ , with a medium effect size of  $r = .39$ .

Table 1. Study variables of students with and without ID

	Students with ID		Students without ID	
	<i>n</i> (%)	<i>M</i> ( <i>SD</i> )	<i>n</i> (%)	<i>M</i> ( <i>SD</i> )
Male students	22 (63%)		22 (63%)	
Age (months) $t_1$	35	104 (8.96)	35	95.0 (11.17)
IQ	35	62 (8.83)	33	99.0 (13.48)
Social skills $t_1$	35	3.05 (0.81)	35	3.18 (0.60)
Indegree $t_1$	35	1.49 (1.34)	35	2.06 (1.64)
Indegree $t_2$	35	1.20 (1.41)	35	2.66 (1.51)
Outdegree $t_1$	35	3.23 (2.45)	35	2.46 (1.58)
Outdegree $t_2$	35	2.89 (2.07)	35	2.97 (2.23)
Interaction partners $t_1$	35	3.80 (2.86)	35	3.57 (1.72)
Interaction partners $t_2$	35	3.31 (2.11)	35	4.09 (2.39)
Reciprocal nominations $t_1$	35	0.91 (0.95)	35	0.94 (1.00)
Reciprocal nominations $t_2$	35	0.77 (0.88)	35	1.54 (1.15)
Total interaction partners $t_1$ - $t_2$	35	5.09 (2.62)	35	5.29 (2.47)
Total reciprocal nominations $t_1$ - $t_2$	35	1.31 (1.30)	35	1.83 (1.32)
Stable interaction partners $t_1$ - $t_2$	35	1.83 (1.64)	35	2.20 (1.39)
Stable reciprocal nominations $t_1$ - $t_2$	35	0.40 (0.60)	35	0.60 (0.85)

## Discussion

This study's aim was to better understand the social relationships of 7 to 8-year-old students with ID in elementary inclusive classrooms by comparing these students with same-gender classmates without ID, but with similar peer-rated social skills. The comparison was made by studying social relationships at the beginning and the end of the school year. The stability, over the course of a school year, of the social relationships of this matched sample was also examined. Finally, the stable reciprocal relationships of these students were investigated in further detail.

The results of this study reveal that students with ID and same-gender students without ID with similar levels of peer-rated social skills did not have many significant differences in their involvement in social relationships with peers. At the beginning of the school year, students with ID had a similar number of interaction partners and reciprocal relationships as their peers without ID. They also gave and received a similar number of play partner nominations as their classmates without ID. At the end of the school year, students with ID still had similar numbers of interaction partners and gave a similar numbers of play partner nominations as their peers without ID. However, students with ID were significantly less often nominated as play partners and had fewer reciprocal relationships than their peers without ID by the end of the school year. Over the course of the year, there was a decrease (not significant) in the average number of nominations received and given and – as a consequence – also a decrease (not significant) in the average number of interaction partners and reciprocal relationships in the group of students with ID. In contrast, social relationships increased significantly in the group of students without ID, resulting in them having significantly more play partner nominations and reciprocal relationships by the end of the school year than their peers with ID. The ratio of

stable reciprocal relationships over a school year accords with the results of other studies in elementary classrooms (Meter & Card, 2016; Poulin & Chan, 2010): Approximately half of the reciprocal relationships of students, both with and without ID, were stable over time. No differences in the stability of social relationships were found between the two groups. Students with and without ID maintained a similar number of social interaction partners and reciprocal relationships with peers over the school year. This result is not in line with previous studies that showed that students with SEN had fewer stable friendships than students without SEN (Schwab, 2018; Wiener & Schneider, 2002). In sum, the results indicate that students with and without ID, who started the school year with similar levels of social skills and a similar involvement in social relationships, maintained a similar number of interaction partners and reciprocal relationships over the school year, but ended up with significantly different involvement in new social relationships by the end of the year, to the disadvantage for students with ID.

The question arises as to why students with ID appear to be socially disadvantaged by the end of the school year. Students' social skills were controlled for, therefore students with ID were probably not excluded from social interactions and relationships because they were perceived by their peers as less cooperative and prosocial than their classmates without ID. It could be that the decreased number of interaction partners and reciprocal relationships of students with ID was caused by a lack of social skills not measured in this study, such as communication skills (Kasari et al., 2011). Sarimski (2019b) reported that students with ID established contact with their peers less often and were less successful in making contacts than their peers without ID. Also, the students with ID in the present study had significantly lower cognitive skills than their peers without ID. Both, communicative and cognitive skills have been found to

be important when it comes to the involvement of students with SEN in social relationships (Bellini et al., 2007; Sarimski, 2019a; 2019b; Schoop-Kasteler & Müller, 2020). Finally, the cooperative and prosocial behavior of students was peer-rated. This approach can provide information on how students' social behavior is perceived by peers but can also have an impact on the validity of the measured construct.

Another possible explanation for the reduced involvement of the students with ID in social relationships lies in the school environment. In order to forge social relationships, students need opportunities for encounters (Holt et al., 2017). Students with SEN are often removed for individualized learning arrangements outside of the classroom, which reduces social interaction with peers (Farmer et al., 2019; Feldman et al., 2016). Spörer et al. (2021) also found that students with SEN in inclusive classrooms where two teachers were present interacted less with their classmates and more with their teachers compared to students without SEN. It could be that the students with ID in the present study had limited shared interactions with their peers and therefore had fewer opportunities to forge social relationships in their classrooms. This assumption is supported by evidence that opportunities for social interaction are more important for the creation of reciprocal relationships between students with and without SEN than the social skills of students with SEN (Kasari et al., 2011; Rossetti & Keenan, 2018).

Finally, the difficulties students with SEN face in their involvement in the peer group can be a result of the peers' behavior (Farmer et al., 2019; Van Den Oord & Van Rossem, 2002). In this study, the decrease in received peer nominations of students with ID indicates that peers were less willing to play with the students with ID at the end of the school year. As a consequence, fewer nominations given by students with ID were reciprocated by peers. This clearly demonstrates that the inclusion of students with SEN is affected by the social dynamics of

the classroom and both students with and without SEN need to be actively involved in the process of inclusion (Farmer et al., 2019).

The examination of the stable reciprocal relationships showed that half of the reciprocal relationships - two thirds in the group of students with ID and almost half in the group of students without ID - lasted one school year. Similar percentages have been found in other studies of friendship stability in elementary school children (Bowker, 2004; Meter & Card, 2016; Poulin & Chan, 2010). However, not all students had a stable reciprocal relationship. One third of the students with ID and less than half of the students without ID had at least one reciprocal relationship that remained stable over the school year. The stable relationships of students with ID were almost entirely same-gender, which demonstrates gender-homophily. This has also been reported in studies (Freeman & Kasari, 2002). Further, evidence for SEN-homophily has been found in other studies. According to Schwab (2018) and Broomhead (2019), students with SEN tend to befriend other students with SEN. In the present study, limited data on this topic could be generated because more than one student with ID was enrolled in only six of the classrooms and other types of SEN were not assessed. Interestingly, peers who had stable relationships with students with ID and with students without ID of the matched sample were perceived as having significantly higher levels of social skills. This suggests that at least one student displaying higher levels of prosocial and cooperative behavior can be beneficial for maintaining a stable social relationship. There is evidence that children who befriend students with SEN are helpful and supportive and often take the role of caregivers in the relationships (Rossetti & Keenan, 2018).

The present study provides important insights into the social relationships of students with ID. Still, there remain a number of limitations that should be considered when interpreting the findings. First, the

study sample was rather small, which raises concerns about whether the results are fully generalizable. Given the relatively small population of students with ID enrolled in inclusive classrooms, it is a fair sample size. However, larger samples would enable the development of an in-depth understanding of the social relationships of students with ID in inclusive classrooms. Second, social skills were assessed using two variables that focused on cooperative and prosocial behavior. Considering the breadth of social skills (Cillesen & Bellmore, 2011), this study provides a rather narrow view. The assessment of other social skills, such as communicative skills, might have led to different results. Third, the two aspects of the social skills of each pupil were rated by four of their peers in order to keep the assessment time for the young participants short. While using only two items might lower the validity of the measured construct, having the perspective of four peers does give a more accurate assessment of how students' social behavior is perceived by peers and therefore affects their involvement in the peer group. Nevertheless, in order to understand the relationship between students' social skills and their involvement in interactions and relationships with peers, more research with valid and reliable instruments is needed. Fourth, no information was available on students with other types of SEN, such as students with learning disabilities or behavioral problems. Thus, it cannot be ruled out that some of the students with ID had stable reciprocal relationships with other students with SEN. This additional information might have led to results similar to those of previous studies (e.g., Broomhead, 2019; Schwab, 2018).

## Conclusions

This study contributes to closing a lacuna in current research on social relationships of young students with ID in elementary inclusive classrooms and their stability over

a school year. The results provide evidence that the involvement of students with ID in social relationships is in many ways comparable with their classmates without ID. At the same time, the findings emphasize the significant role socially skilled peers play in maintaining any stable reciprocal relationships and show that the successful inclusion of individuals with ID also depends on the extent to which peers are willing to include them in social interactions and relationships. In inclusive classrooms, efforts by teachers, such as the implementation of inclusive learning arrangements, providing opportunities for shared experiences, and establishing an inclusive classroom norm might be helpful in ensuring the full involvement of students with ID in their peer group (Farmer et al., 2019; Juvonen et al., 2019). Future studies should consider assessing social relationships in inclusive classrooms longitudinally and across different age groups. In addition, looking into the quality of social relationships as well as student characteristics, such as a wider range of social skills, in more detail is important.

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