Repositório ISCTE-IUL

Abstract

Teachers play a key role in creating effective conditions for students to succeed in school. The quality of student-teacher relationships is consistently associated with social, emotional, behavioural, and academic adjustment and it is even more relevant for students with special educational needs (SEN), considering these students' emotional, social, and learning vulnerabilities. This study aimed to examine the associations between student's externalizing and internalizing behaviour, social skills, and academic performance, and teachers' perceptions of conflict and closeness in their relationships with students with and without SEN. Data were collected from 360 students of 3rd, 5th, and 7th grades (169 students with SEN). Teachers ($n = 74$) reported on student-teacher relationship and students' social skills, behaviour problems, and academic performance. Special education teachers ($n = 38$) provided information regarding the diagnosis and profile of functioning of students with disabilities. Results showed that teachers' reports of students' social skills and externalizing problems were the strongest predictors of closeness and conflict. Internalizing problems and SEN status also predicted decreased closeness, despite smaller effects. Taken together, findings support the importance of professional development opportunities focusing on facilitating teachers' relationships with students with perceived challenging behaviour.

Student-Teacher Closeness and Conflict in Students with and without Special Educational Needs

Teachers play a key role in assuring students' participation in classroom and school activities and, therefore, in creating effective conditions for students to succeed in school (McGrath & Van Bergen, 2017). The quality of student-teacher relationships has been associated with social, emotional, behavioural, and academic adjustment (Hamre & Pianta, 2001; Jerome, Hamre, & Pianta, 2009; Pianta, Hamre, & Stuhlman, 2003). Student-teacher relationships may be even more significant for students with special educational needs (SEN), considering their emotional, social, and/or learning vulnerabilities (Murray & Greenberg, 2001; Murray & Pianta, 2007).

Despite studies consistently showing that positive student-teacher relationships are associated with improved social development and adjustment to school (Hamre & Pianta, 2001; Jerome et al., 2009; Pianta et al., 2003), most studies address student-teacher relationships in students without SEN (Murray & Greenberg, 2001; Verschueren, 2015). The few studies available have shown that teachers tend to perceive their relationship with students with SEN as less positive than their relationship with students without SEN, namely in preschool (Demirkayaa & Bakkaloglu, 2015) and primary school (Barbosa, Campos, & Valentim, 2011; Murray & Murray, 2004). Furthermore, students with SEN also tend to perceive their relationship with teachers as less satisfactory than their peers without SEN (Al-Yagon & Mikulincer, 2004; Murray & Greenberg, 2001).

Specific characteristics of the students play an important role in student-teacher relationships (Nurmi, 2012). Poorer relationships between teacher and students with SEN may result from students' learning, social, and/or behavioural problems (e.g., Gresham, Elliot, Vance & Cook, 2001; Maag, 2005; Nurmi, 2012; Sabol & Pianta, 2012). In addition, teachers' beliefs about their efficacy in dealing with students with perceived challenging behaviours, as well as their expectations regarding students' competence may affect their involvement with students and with their education (e.g., Ben-Yehuda Leyser & Last, 2010; Damianidou & Phtiaka, 2018; Kumar & Lauermann, 2018; Kumar & Hamer, 2013). Thus, more difficult relationships with students with SEN may also result from teachers' knowledge of students' SEN status.

Considering the role that student-teacher relationships play in students' participation in classroom activities and involvement with peers (Jerome et al., 2009; Murray & Pianta, 2007), it is important to examine the influence of specific variables on student-teacher relationship. The current study aims to contribute to the evidence base on student-teacher relationships, by seeking to disentangle the influence of students' social and behavioural characteristics and SEN status. Furthermore, it extends previous research by examining these associations in a European sample of students with and without SEN, from primary to lower secondary school (i.e., 3rd, 5th, and 7th grades), while existing research seems to focus on students up to the upper grades of primary school.

Quality of Student-Teacher Relationships

We adopted Pianta's framework for investigating student-teacher relationship (c.f., Pianta, 1999; Pianta et al., 2003; Sabol & Pianta, 2012). Within this framework, grounded in attachment theory (Bowlby, 1982), the quality of the student-teacher relationship has been defined according to three dimensions: (a) closeness, when the teacher perceives that his/her relationship with the student involves warmth and positive affect, smooth communication, and a sense of comfort when the student approaches the teacher; (b) conflict, when the teacher perceives that his/her relationship with the student is marked with tension and disaffection; and (c) dependence, when the teacher perceives a number

of student's behaviours related to possessiveness and difficulty in moving apart from the teacher. Aligned with this approach, we assume that student-teacher relationships characterized by low levels of conflict and dependency and high levels of closeness are positive relationships for preschool and primary school students (Davis, 2003; Verschueren & Koomen, 2012). Moreover, despite lower secondary students relying less on teachers for comfort (explaining decreases in closeness), teachers continue to play an important role as a secure base for this age group (Verschueren, 2015). So, less conflict and less dependency are assumed to reflect an adequate use of the relationship with the teacher (Verschueren & Koomen, 2012), and as such, a sign of positive student-teacher relationship.

Predictors of the Quality of Student-Teacher Relationship

Behaviour problems are consistently associated with how teachers perceive their relationships with students (e.g., Nurmi, 2012; Sabol & Pianta, 2012). Externalizing behaviour problems include disruptive, hyperactive, and/or aggressive behaviour, by means of which the student negatively acts on his/ her external environment. Contrarily, internalizing behaviour problems are directed at the student's internal psychological environment; examples of such behaviour problems are social withdrawal, anxiety, and inhibition (Liu, 2004).

Regarding student-teacher relationships, studies consistently show a strong positive association between conflict and externalizing behaviour (Nurmi, 2012; Sabol & Pianta, 2012). Teachers tend to perceive more conflict with preschool, kindergarten and primary school students with externalizing problems and these reports tend to persist throughout school (Henricsson & Rydell 2004; Jerome et al. 2009; Pianta & Stuhlman, 2004). In addition, primary school students with externalizing behaviour tend to rate their relationship with the teacher as more conflictual than students without such behaviour (Henricsson & Rydell 2004).

Findings on the associations between student-teacher closeness and externalizing behaviour are somewhat mixed, with a great number of studies focusing on early primary school students. For example, Silver, Measelle, Armstrong, and Essex (2005) reported associations between average to high levels of student-teacher closeness and decreased externalizing behaviour over time (i.e., from kindergarten to early primary school) for students exhibiting high initial levels of externalizing behaviour. In turn, Mejia and Hoglund (2016) found no associations between teacher-child closeness and children's externalizing behaviour in early primary school. Importantly, Henricsson and Rydell (2004) observed frequently positive interactions, such as encouragement and praise, between teacher and students with increased externalizing behaviour, with levels of closeness similar to those found for children without internalizing or externalizing behaviours. Finally, there is relatively consistent evidence that student-teacher closeness is negatively associated with internalizing behaviour in both preschool and primary school students (Buyse, Verschueren, Doumen, Damme & Maes, 2008; Henricsson & Rydell, 2004; Nurmi, 2012).

Research has also examined the association between social skills and teachers' perceptions of the quality of their relationships with students. Social skills are learned and socially accepted social behaviours that facilitate positive interaction and approval from others in the social context; therefore, social skills are important for competent social functioning (Gresham & Elliott, 1997; Lemos & Meneses, 2002; Owes & Johnston-Rodrigues, 2010). Pianta and Stuhlman (2004) showed that increased student-teacher conflict was associated with lower social competence (i.e., decreased cooperative play, rule following, and empathy and increased aggression), as displayed by first grade

students. In addition, Nurmi (2012) found that students' social competence was associated with teachers increased perceptions of closeness.

Positive associations between behaviour problems and student-teacher conflict and between social skills and student-teacher closeness have also been documented for students with SEN (e.g., Blacher, Baker, & Eisenhower, 2009). Importantly, there is some evidence that associations between SEN status and student-teacher relationship quality may be mediated by student's behaviour problems and social skills (Eisenhower, Baker, & Blacher, 2007) and that behaviour problems and social skills are stronger predictors of student-teacher conflict and closeness, respectively, than SEN status (Blacher et al., 2009). Notably, the few studies aiming to disentangle the role of SEN status, social skills, and behavioural problems have focused on preschool and early primary school students.

Academic competence and sociodemographic variables, such as age and gender, are also important predictors of student-teacher relationship. Higher academic competence is associated with more closeness, and lower academic competence is associated with greater conflict (e.g., Jerome et al., 2009). Further, teachers report greater conflict with boys and closer relationships with girls (Barbosa et al., 2011; Birch & Ladd, 1997; Hamre & Pianta, 2001) and report less conflict and more positive relationships with students from early school levels than with students from more advanced ones (Barbosa et al., 2011; Birch & Ladd, 1997; Hamre & Pianta, 2001; Patrício, Barata, Calheiros, & Graça, 2015).

Current Study

The goal of this study was to examine the associations between students' behaviour problems (i.e., externalizing and internalizing) and social skills, and student-teacher conflict and closeness in students with and without SEN, controlling for students' age, gender, and academic performance. We hypothesized that teachers would report more conflict and less closeness with students with SEN (Barbosa et al., 2011; Demirkayaa & Bakkaloglu, 2015; Murray & Murray, 2004), with students with increased behaviour problems, and with students with lower social skills (Buyse et al., 2008; Henricsson & Rydell, 2004; Nurmi, 2012; Pianta & Stuhlman, 2004). We also expected reports of lower quality student-teacher relationship (i.e., more conflict and less closeness) with students with lower academic performance (Jerome et al., 2009), reports of less closeness with older students, and reports of more conflict with boys (Barbosa et al., 2011; Birch & Ladd, 1997; Hamre & Pianta, 2001; Patrício et al., 2015).

Importantly, based on previous evidence that behavioural characteristics are stronger predictors of student-teacher relationship than SEN status (Blacher et al., 2009; Eisenhower et al., 2007), and that behaviour problems and social skills are central to teachers perceptions of their relationship with students (Buyse et al., 2008; Henricsson & Rydell, 2004; Jerome et al., 2009; Nurmi, 2012; Pianta & Stuhlman, 2004), we expected that SEN status *per se* would not stand out as the most important predictor of student-teacher relationship, but rather students' behavioural characteristics. This study adds to the limited knowledge base on the relationships between teachers and students with SEN, by focusing on late primary and early secondary school students, clearly underrepresented in the literature.

Method
Participants

Data presented in this paper were collected within a larger longitudinal study aiming to understand the social participation of students with and without SEN in regular schools, using a cross-sectional design with 3 school grade cohorts (3rd, 5th, and 7th

grades). Students were selected from 23 schools of Portuguese districts in urban (11), semi-urban (3), and rural areas (9), and in high (3), medium (7), and low socioeconomic neighbourhoods (13), resulting in a diverse sample in terms of sociodemographic characteristics. Only classrooms that included at least one student with SEN participated in the study. Based on Decree-Law No. 3/2008, students with SEN were those presenting permanent, functional, or structural differences in their bodily functions, that impacted their communication, mobility, and interpersonal relationships, and, therefore, were entitled to special education services. On average, each class included 2.6 students with SEN ($SD = 1.6$).

The current study includes data from 360 students (193 boys) from 3rd, 5th and 7th grades (169 students with SEN). Table 1 presents descriptive statistics for participants. Teachers ($n = 74$) filled in questionnaires regarding all the students with SEN in their class plus students without SEN randomly selected by the research team (up to a maximum of 5 students per teacher). Teachers were those who spent more time with each class, that is, the lead classroom teacher in the case of 3rd graders and the form tutors in the case of 5th and 7th graders. Form tutors are regular teachers who teach one or more school subjects to a class and, in addition, are responsible for coordinating with other teachers, for identifying and monitoring students' difficulties, for ensuring communication with families, etc. Most teachers (85%) were female, were on average 46 years old, and had on average 20 years of experience with students with SEN (see Table 1). Six teachers did not report their age and ten teachers did not report their years of experience with students with SEN.

No differences were found in the distribution of students with and without SEN by grade level, $\chi^2(2) = 0.44$, $p = .805$. However, differences were found between students with and without SEN as a function of gender, $\chi^2(1) = 16.87$, $p < .001$, and age, $t(335,139)= - 4.95$, $p < .001$. On average, students with SEN were one year older than students without SEN in all the three school levels and there was a higher proportion of boys in the group of students with SEN (see Table 1).

There were no significant differences between students attending schools in high and medium vs. low socioeconomic status neighbourhoods regarding students' SEN status, $\chi^2(1) = 1.28$, $p = .259$; gender, $\chi^2(1) = 0.01$, $p = .933$; and age $t(358)= 0.99$, $p = .321$. Schools from low socioeconomic status neighbourhoods had fewer male teachers (8% vs. 23% in schools of medium and high socioeconomic status), $\chi^2(1) = 3.73$, $p = .053$. However, no significant differences were found regarding teaching experience, $t(71)= 0.32$, $p = .752$. On average, classes from schools within low socioeconomic status neighbourhoods had 20 students per class, meaning two students less per class, when compared with classes of schools from medium and high socioeconomic status contexts, $t(72)= 1.86$, $p = .066$.

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To describe the characteristics of students with SEN, special education teachers ($n = 38$) filled out a questionnaire about their students' profile of functioning, based on the PEELS (Daley, Simeonsson, & Carlson, 2009) and the ICF (WHO, 2007). Students' profile of functioning is composed of domains: intellectual functioning (teacher's perception of the student's ability to learn, reason, and solve problems in relation to what is expected for same-age students), self-regulation (teacher's perception of the student's ability to manage emotions, behaviour, and attention in relation to what is expected for same-age students), interaction with peers (teacher's perception of student's ability to establish and maintain contacts and friendships with peers and experience positive emotions from these

interactions in relation to what is expected for same-age students), communication (teacher's perception of student's ability to communicate, understand, and be understood by others in relation to what is expected for same-age students), motor development (teacher's perception of student's mobility and motor skills in relation to what is expected for same-age students), and global health (teacher's perception of student's global health and its impact on students' participation in school). On average, students with SEN were rated as presenting mild to moderate difficulties regarding intellectual functioning, and mild difficulties concerning self-regulation, communication, and interaction with peers. Students' motor development and global health were rated, on average, as close to normal, that is, as not placing restrictions on student's participation in school life. In addition, we collected information regarding students' diagnosis from their files. From the 150 students with SEN who had a diagnosis description in their files, 37.3% were diagnosed with an intellectual impairment, 29.3% were diagnosed as having a specific learning disability, and 13.3% were diagnosed as having emotional and behavioural disorders; the remaining students were diagnosed with ADHA (9.4%), communication disorders (4.7%), sensory impairments (2%), health problems (2%), motor impairments (1.3%), and multiple impairments (0.7%).

Measures
Student-Teacher Relationship. The short form of the Student-Teacher Relationship Scale (STRS, Pianta, 1992; Portuguese version, Patrício et al., 2015) was used to assess the overall quality of the student-teacher relationship. It includes 15 items, organized in two scales and measured on a 5-point response scale, ranging from "1 – *definitely does not apply*" to "5 – *definitely applies*". The Conflict subscale (8 items) assesses the degree of tension and disaffection that the teacher experiences in the relationship with the student (e.g., "This student easily becomes angry with me"). The higher the score, the more negative is the teacher perception. The Closeness subscale (7 items) assesses positive experiences concerning affection and communication with the students (e.g., "I share an affectionate and warm relationship with this student"). The higher the score, the more positive is the teacher perception. No major changes were made in the Portuguese version of this measure. The term "child" in the original items was replaced with "student", given that both this and the Portuguese validation study (Patrício et al., 2015) focused on students with a more diversified age range.

Score validity has been demonstrated in several international studies (e.g., Drugli & Hjemdal, 2012; Koomen, Verschueren, van Schooten, Jak, & Pianta, 2012; Settanni, Longobardi, Sclavo, Fraire, & Prino, 2015). To establish validity in our sample, a Confirmatory Factor Analysis (CFA) was conducted in RStudio 1.1.383 (RStudio, 2016) using the maximum likelihood estimation to test the two-factor structure. The model with greater fit to the data was achieved by excluding one item from the conflict dimension (given its low loading and high modification indices) and correlating 7 pairs of errors from the same dimensions, $\chi^2(69) = 136.15$, $\chi^2/DF = 1.98$, $p < .001$, CFI = .97, TLI = .96, RMSEA = .05 [.04, .07]. In this study, internal consistency for closeness and conflict was .89 and .88, respectively.

Students' Social Skills and Behaviour Problems. To assess students' social skills and behaviour problems, teachers completed the *Social Skills Rating System* (SSRS, Gresham & Elliot, 1990; Portuguese version, Lemos & Meneses, 2002). This measure has 54 items organized in three scales (social skills, behaviour problems, and academic competence). The Social Skills scale (30 items) assesses three types of social behaviour

- cooperation, assertion, and self-control - addressing how often the student demonstrates help and sharing behaviours, compliance with shared norms and rules, socially appropriate ways of initiating interactions and positive strategies of conflict resolution (Lemos & Meneses, 2002) (e.g., "This student, when appropriate, says positive things about himself/herself"). The higher the score, the more positive the teacher's perception of students' social skills.

The Behaviour Problems scale (18 items) assesses three types of behaviours: externalizing problems, internalizing problems, and hyperactivity (Lemos & Meneses, 2002). Externalizing problems (7 items) consist of physical or verbal aggression and low self-control (e.g., "This student fights with others"). Internalizing problems (6 items) include anxiety, sadness, and low self-esteem (e.g., "This student appears lonely"). Hyperactivity (5 items) includes excessive activity and impulsive reactions (e.g., "This student is restless or moves excessively"). Higher scores indicate more externalizing, internalizing, and hyperactivity behaviours, respectively.

The Academic competence scale (6 items) assesses students' academic competence by asking the teacher to compare a student´s global, Math, and Portuguese academic performance and ability with the performance of his/her classroom peers (e.g.," Compared with the other students in the classroom, this student´s math performance is…"). In this study, we considered only global academic performance. The response scales range from "0 – *never*" to "2 – *very often*" in the social skills and behavioural problems subscales, and from "1 – *lowest academic competence*" to "5 – *highest academic competence*" in the academic competence subscale. There are no relevant differences in item formulation between the original and the Portuguese version of the SSRS.

Score validity has been demonstrated in several international studies (e.g., Bandeira, Del Prette, Del Prettte, & Magalhães, 2009; Greshamet al., 2011). For establishing the validity of the Social Skills scale and Behaviour Problems scale in our sample, we tested the factor structure of each scale through two CFA's with maximum likelihood estimation. Regarding the Social Skills scale, a model with greater fit to the data was achieved by considering social skills as a higher order factor and by excluding four items from the assertion subscale and two items from the self-control subscale, given their relations with different dimensions., $\chi^2(242) = 574.74$, $\chi^2/DF = 2.38$, $p < .001$, CFI = .91, TLI = .91 RMSEA = .07 [.06, .08]. The internal consistency in this study was .93. Regarding the Behaviour Problems scale, externalizing problems and hyperactivity were highly correlated ($r =. 90$); therefore, we tested a model with only two dimensions: externalizing problems and internalizing problems. A model with greater fit was achieved by excluding two items (originally in the hyperactivity dimension) and by correlating 10 pairs of errors from the same dimensions, $\chi^2(93) = 203.79$, $\chi^2/DF = 2.19$, $p < .001$, CFI = .96, TLI = .95 RMSEA = .06 [.05, .07]. The internal consistency was .94 for externalizing problems and .77 for internalizing problems.

Procedures

The study was authorized by the Portuguese Data Protection Commission and by the Ministry of Education. Data were collected after obtaining permission from the schools and parental informed consent. All the students in a class that had at least one student with SEN enrolled were asked to participate. Their teachers were asked to fill out the self-report measures, either during a class period (while their students filled in a sociometric task and a questionnaire related to their subjective experience within the classroom and the school) or to return them once completed. Data were collected during the second term and at the beginning of the third term of the school year (from January

to April). In the same period, special education teachers were asked to provide information regarding their students with SEN. Confidentiality was assured to all informants.

Data Analyses

To address our hypotheses on the predictors of student-teacher relationship three types of analysis were conducted. First, descriptive statistics were computed and a set of *t*-Student tests were conducted to investigate differences between students with and without SEN. For checking normality assumptions, means, standard deviations, and measures of skewness (Sk) and kurtosis (Ku) for each of the items of the student-teacher relationship scale were analysed. Absolute values of Sk smaller than 3 and Ku smaller than 7 (Kline, 2011) were considered indicators of no strong deviations from the normal distribution. Sk absolute values ranged between -1.71 and 2.2 and Ku values ranged between -.90 and 4.41, suggesting approximate normal distributions. Spearman rank order and Pearson product-moment correlations were also computed to investigate the associations between student variables (gender, age, SEN status, social skills, behaviour problems, academic performance) and student-teacher relationship (conflict and closeness).

Second, to further investigate the predictors of the student-teacher relationship, a series of hierarchical linear models were computed, controlling for teacher effects. Hierarchical linear models with four stages (Model 0, Model 1, Model 2, and Model 3) were conducted for closeness and conflict. Model 0 or 'empty model' was estimated with no predictors to determine the amount of variance in the student-teacher relationship accounted for at the teacher level. In Model 1, SEN status (students with SEN vs. students without SEN) was included as predictor. In Model 2, students' age and gender were included as predictors. In Model 3, students' social skills, externalizing and internalizing problems, and academic performance were added as predictors. In addition, school neighbourhoods' socioeconomic status was included in all models, as a dichotomous variable (Low SES, yes/no). All predictors, except for dichotomous variables, were grand mean centred. The significance of the quality of more complex models over simpler models was evaluated with the difference test of -2 Log Likelihood (-2LL) and considering Akaike's Information Criterion (AIC) and Schwarz's Bayesian Criterion (BIC).

To estimate the practical significance of the differences between students with and without SEN in *t*-Student tests, we computed Cohen's *d* (Cohen, 1988). To estimate the practical significance of the associations between student-teacher relationship and students' characteristics in the hierarchical lineal models, we computed effect sizes as the product of the unstandardized regression coefficient and the standard deviation of the predictor, divided by the standard deviation of the outcome (Burchinal, Roberts, Zeisel, Hennon, & Hooper, 2006; Grande & Aguiar, 2011). The latter effect size estimates represent the magnitude of the association in standard deviation units, with $d = .10$ considered a small effect, $d = .30$ a moderate effect, and $d = .50$ an important effect (Burchinal et al., 2006; Cohen, 1988).

Results
Descriptive Statistics

Results showed that teachers perceived their relationships with students as positive, reporting relatively high levels of closeness ($M = 3.77$, $SD = 0.80$) and low levels of conflict ($M = 1.69$, $SD = 0.83$). There were statistically significant differences between teachers' perceptions of their relationships with students with and without SEN. Teachers

perceived less closeness, $t(357) = 2.72$, $p = .007$, $d = 0.29$ and more conflict, $t(357) = -2.93$, $p = .004$, $d = 0.31$, with students with SEN than with students without SEN.

In addition, teachers perceived students' social skills positively ($M = 1.33$, $SD = 0.40$) and tended to report few externalizing ($M = 0.55$, $SD = 0.58$) and internalizing problems ($M = 0.61$, $SD = 0.46$) for their students. Regarding students' academic performance, results showed that teachers tended to perceive students as having an average academic performance ($M = 2.80$, $SD = 0.64$). Results showed that teachers perceived students with SEN as having fewer social skills, $t(356) = 8.13$, $p < .001$, $d = 0.86$, more externalizing problems, $t(352) = -3.01$, $p = .003$, $d = 0.32$, and more internalizing problems, $t(352) = -6.17$, $p < .001$, $d = 0.66$; and as presenting poorer academic performance , $t(352) = 13.68$, $p < .001$, $d = 1.18$, than their peers without SEN. Despite differences in the perceived behaviour of students with and without SEN, the mean values of both externalizing and internalizing problem behaviours are inferior to 1 in both groups of students.

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Associations between Student-Teacher Relationships and Students' Characteristics

To investigate the associations between student-teacher relationship and students' characteristics, bivariate correlations were computed (see Table 3). Results suggested a negative association between closeness and students' age ($r = -.34$) and a positive association between closeness and social skills ($r = .40$). In addition, conflict was negatively (strongly) associated with social skills ($r = -.58$) and positively and strongly associated with externalizing behaviour ($r = .70$).

SEN status was neither associated with closeness nor with conflict. Nevertheless, SEN status was negatively associated with social skills ($r = -.40$) and academic performance ($r = -.60$) and weakly positively associated with internalizing problems ($r = .34$).

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To further investigate these associations, hierarchical linear models (Table 4 and Table 5) were computed for student-teacher relationship closeness and conflict. In Model 0, Intraclass Correlation Coefficients (ICC) were computed for each outcome variable with no predictors entered, resulting in an ICC = .37 for closeness and ICC=.36 for conflict. Given the high ICC values, classroom-level variance was accounted for through hierarchical linear modelling. Both for closeness and conflict, SEN status was entered in Model 1; student's gender and age were entered in Model 2; social skills, externalizing and internalizing problems, and academic performance were entered in Model 3. Schools' socioeconomic status was included in the three models.

As presented in Table 4, SEN status was positively associated with student-teacher closeness (B = .21, $p = .004$, $d = 0.13$) (Model 1). However, when student´s age and gender were added (Model 2), SEN status no longer predicted closeness. Student's age was also negatively associated with student-teacher closeness, despite the small effect (B = -0.11, $p < .001$, $d = 0.29$). When social skills, problem behaviours, and academic performance were added to the model, its quality improved. In Model 3, students' social skills were positively (and strongly) associated with student-teacher closeness (B = 1.30, $p < .001$, $d = 0.65$), followed by externalizing (B = 0.58, $p < .001$, $d = 0.41$) and internalizing problems (B = 0.21, $p = .014$, $d = 0.12$). In this model, SEN status and age were significant and negative predictors of closeness, despite weak effects (Table 4). Considering schools socioeconomic status, and despite its small effect, we observed a

marginal and negative effect of low SES in Model 1 (B = -0.24, p = .071, d = 0.15) and in Model 2 (B = -0.21, p = .085, d = 0.13) and a significant and negative effect in Model 3 (B = -0.20, p = .052, d = 0.12).

As presented in Table 5, SEN status was negatively associated with student-teacher conflict (B = -0.23, p = .004, d = 0.14) (Model 1). However, this relation was no longer statistically significant in subsequent models. Students' gender was negatively associated with conflict (B = -0.36, p < .001, d = 0.22) in Model 2 but not in Model 3. In Model 3, externalizing problems were positively associated with student-teacher conflict (B = 0.73, p < .001, d = 0.51) while social skills were negatively associated (B = -0.63, p < .001, d = 0.30). School's neighbourhood socioeconomic status was not associated with student-teacher conflict.

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Discussion VER O DOCUMENTO QUE ENVIO. AS MUDANÇAS DEVEM SER FEITAS NO DOCUMENTO QUE ENVIO.

The goal of this study was to investigate the association between individual student characteristics (i.e., age and gender, social skills, behaviour problems, and academic performance) and the quality of the student-teacher relationship. Based on some studies highlighting that teachers tend to report less positive relationships with students with SEN (e.g., Al-Yagon & Mikulincer, 2004; Barbosa et al., 2011; Murray & Murray, 2004), we expected this same pattern to emerge in this study. However, we also expected that student's social skills and behaviour problems would be stronger predictors of student-teacher relationship than SEN status *per se* (e.g., Blancher et al. 2009; Eisenhower et al., 2007).

Results are globally aligned with our initial hypotheses. Teacher reported a less close and more conflictual relationship with students with SEN than with students without SEN, and they also reported more difficult behaviour (such as decreased social skills, and higher externalizing and internalizing behaviour) for students with SEN. However, after controlling for SEN status, social skills and externalizing behaviour were the most important predictors of student-teacher conflict, in the expected direction. Furthermore, after controlling for SEN status, behavioural characteristics were also important predictors of closeness, though not always in the expected direction.

Regarding conflict, teachers tended to report more tension and disaffection with students who presented lower control and increased restlessness and impulsive reactions (indicators of externalizing behaviour, Lemos & Meneses, 2002) and with students with decreased prosocial behaviours, who had difficulties in complying with rules, respecting commitments, and engaging in socially appropriate interactions in conflictual situations (indicators of social skills, Lemos & Meneses, 2002). These results are aligned with previous studies highlighting the significant effect of increased externalizing behaviour and decreased of social skills on student-teacher conflict, from the point of view of the teacher (e.g., Henricsson & Rydell, 2004; Jerome et al., 2009; Pianta & Stuhlman, 2004) and of the student (e.g., Henricsson & Rydell, 2004). Regarding closeness, student-teacher closeness was strongly and positively associated with social skills, moderately and positively associated with externalizing behaviour, and weakly and positively associated with internalizing behaviour. These findings on behaviour problems are not aligned with previous studies showing a negative relation between closeness and internalizing behaviour (e.g., Buyse et al., 2008; Numri, 2012), and extant reports of no associations between closeness and externalizing behaviour (Mejia & Hoglund, 2016).

As, in this study, both students with and without SEN were described by teachers as presenting, on average, relatively low levels of externalizing and internalizing behaviours, it is likely that participating teachers were able to mobilize additional efforts to become closer to these students to support them and tackle their difficulties. While students with increased levels of externalized behaviour tend to establish more conflicting relationships, as consistently documented in the literature, they also require increased attention and/or intervention from teachers. Such attention/intervention may provide increased opportunities for positive contact with students with perceived challenging behaviour, affecting teachers' perceptions of closeness. Similarly, internalizing behaviours may also require teachers to seek opportunities for contact in order to understand the nature of and address students' difficulties. Thus, contrary to what one would expect (e.g., Buyse et al, 2008; Numri, 2012), mild behaviour problems', such as the ones reported by teachers in this study, may trigger increased contact with students with perceived challenging behaviour, positively influencing teachers' perceptions of closeness. However, additional studies, with longitudinal designs, are needed to test this hypothesis.

Importantly, while SEN status no longer predicted student-teacher conflict after accounting for students' social skills, behaviour problems, and covariates, SEN status remained a predictor of less close student-teacher relationship after controlling for other student characteristics. Therefore, students with SEN, who present emotional, social and learning vulnerabilities (Gresham, Elliot, Vance, & Cook, 2011; Schwab, Gebhardt, Krammer, & Gasteiger-Klicpera, 2015), seem not to experience as much proximity with teachers as students without SEN, regardless of their social, behavioural, and academic characteristics. Considering the important role of student-teacher relationship for students' emotional and social development, as well as for adjustment to school (Brinkworth, McIntyre, Juraschek & Gehlbach, 2018), these findings suggest the need to provide professional development opportunities to support primary and lower secondary school teachers in developing relationships with students with SEN.

Limitations and Conclusions

The findings of this study should be considered within the boundaries of its limitations. First, like other cross-sectional and correlational studies, the nature of our design prevents cause-effect inferences and does not allow us to disentangle the direction of reported associations as well as the influence of unaccounted third variables. Second, the measurement of main variables relied exclusively on teachers' report, which may have resulted in artefactual covariance based on common rater effects (Podsakoff, Mackenzie, Lee, & Podsakoff, 2003). Third, to fit measurements to our data, we used modification indexes to increase model adjustment, with potential loss of comparability across samples. Fourth, it may be argued that our findings are based on a relatively small sample, with subsequent limited power.

Despite these limitations, our study builds on a European sample of primary and lower secondary education teachers and their students with and without SEN to add to the available evidence on the predictors of perceived student-teacher closeness and conflict. Although replication is needed, findings suggest that teachers are able to address student's mild behaviour problems through increased student-teacher closeness; however, they may struggle with establishing close relationships with student's with SEN after accounting for student-teacher social skills and behaviour problems. Although tentatively, we argue that these findings may reflect the prevalence of specific conceptions regarding special education, implying that the learning of students with SEN is the responsibility of specialized school staff, and not of the classroom teachers, with potential effects in

student-teacher closeness. Therefore, moving toward an inclusive education paradigm that supports the teachers of each class in addressing the needs of all students may be key to addressing these effects.

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Table 1
Descriptive Statistics of Participants

	Students with SEN (*n* = 169)	Students without SEN (*n* = 191)	Teachers (*n* = 74)
Age			
Min.	8	8	37
Max.	16	16	61
M	11.59	10.60	46.01
SD	2.13	1.95	6.10
Gender			
Female	59 (34.9%)	108 (56.5%)	63 (85.1%)
Grade Level			
3rd	43 (25.4%)	54 (28.3%)	20 (27%)
5th	60 (35.5%)	63 (33%)	25 (33.8%)
7th	66 (39.1%)	74 (38.7%)	29 (39.2%)
Professional Experience (years)			
Min			10
Max			34
M			23.09
SD			6.20
Experience with students with SEN (years)			
Min			5
Max			32
M			20.39
SD			8.42

Note. SEN = Special Educational Needs.

Table 2

Means and Standard Deviations for Student-teacher Relationship, Social Skills, Behaviour Problems, and Academic Performance of Students With and Without SEN

	Students with SEN		Students without SEN		Total sample	
	M	*SD*	*M*	*SD*	*M*	*SD*
Student-teacher relationship						
Closeness	3.65	0.80	3.88	0.80	3.77	0.80
Conflict	1.83	0.93	1.57	0.72	1.69	0.83
Social skills	1.16	0.38	1.48	0.36	1.33	0.40
Behaviour problems						
Externalizing behaviour	0.64	0.61	0.46	0.53	0.55	0.58
Internalizing behaviour	0.76	0.42	0.47	0.45	0.61	0.46
Academic performance	2.06	0.94	3.48	1.01	2.80	0.64

Note. SEN = Special Educational Needs.

Table 3

Correlation Coefficients between Variables

	1	2	3	4	5	6	7	8
1. SEN status (no=0, yes=1)	-							
2. Gender (girls=0, boys=1)	.22**	-						
3. Age	.24**	.04	-					
4. Closeness	-.15**	-.10	-.34**	-				
5. Conflict	.14*	.23**	.12*	-.14**	-			
6. Social skills	-.40**	-.25**	-.20**	.40**	-.58**	-		
7. Externalizing behaviour	.16**	.32**	.16**	.00	.70**	-.61**	-	
8. Internalizing behaviour	.34**	.13*	.13*	-.15**	.21**	-.48**	.19**	-
9. Academic performance	-.60**	-.20**	-.20**	.30**	-.24**	.62**	-.28**	-.37**

Note. SEN = Special Educational Needs. *p* < .05. **p* < .01.

Table 4

HLM Parameter Estimates Predicting Student-Teacher Closeness

	Model 1			Model 2			Model 3		
	B	SE	ES[a]	B	SE	ES[a]	B	SE	ES[a]
Intercept	3.76***	0.08		3.67***	0.08		3.86***	0.07	
SEN status (no=0; yes =1)	0.21*	0.07	.13	0.09	0.08	.06	-0.23**	0.08	.14
Gender (girls=0; boys=1)				0.11	0.07	.07	0.11	0.07	.06
Age				-0.11***	0.03	.29	-0.11***	0.02	.29
Social skills							1.30***	0.14	.68
Externalizing behaviour							0.58***	0.08	.42
Internalizing behaviour							0.22*	0.09	.12
Academic performance							0.03	0.04	.00
-2LL	797.53			785.75			664.01		
AIC	801.53			789.75			668.01		
BIC	809.29			797.49			675.68		

Note. SEN = Special Educational Needs. [a]Effect size; *p < .05. **p < .01. ***p < .001.

Table 5

HLM Parameter Estimates Predicting Student-Teacher Conflict

	Model 1			Model 2			Model 3		
	B	SE	ESa	B	SE	ESa	B	SE	ESa
Intercept	1.81***	0.08		1.91***			1.70***	0.06	
SEN status (no=0; yes =1)	-0.24**	0.08	.14	-0.11	0.01	.07	0.01	0.06	.01
Gender (girls=0; boys=1)				-0.36***	0.02	.22	-0.04	0.06	.01
Age				0.05	0.01	.13	-0.00	0.02	.03
Social skills							-0.63***	0.12	.34
Externalizing behaviour							0.73***	0.06	.51
Internalizing behaviour							-0.09	0.07	.03
Academic Performance							0.03	0.03	.00
-2LL	850.58			835.03			558.21		
AIC	854.58			839.03			562.21		
BIC	862.33			846.77			569.86		

Note. SEN = Special Educational Needs. aEffect size; *p* < .05. **p* < .01. ***p* < .001