

## **Student-teacher relationship representation and school adjustment in primary school**

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### **Abstract**

The present study investigates student-teacher and student-peer relationships, as well as school adjustment. A novelty element is the use of drawing of oneself with a teacher to predict some aspects of children's adjustment in primary school. Our aim was to evaluate what aspects of student-teacher relationship as perceived by children were more predictive of relational wellbeing in class and school adjustment. In sum, our results confirm that, as predicted by the attachment theory (Hamre & Pianta, 2001), a relationship perceived as close by the teacher goes hand in hand with school adjustment and relational wellbeing in school. Autonomy, too, play a positive role. In terms of predictive power, gaining autonomy from teachers seems to predict students wellbeing even more than closeness, at least as it appears from students pictorial representation.

**Keywords:** student-teacher relationship, children drawing, primary school, school adjustment

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## Introduction

Many empirical works have been devoted to the quality of the student-teacher relationship (see Koca, 2016 for a review). Researches on the links among student-teacher relationships, students' motivational attitudes and beliefs, and their academic adjustment have been frequently embedded in a tradition that extends the attachment perspective to the bond between teacher and student (Bowlby, 1969; Hamre & Pianta, 2001). Central to this approach is the notion that relationships in which teachers communicate warmly and openly with their students (high closeness), have few conflicts, and are not concerned about students' overreliance (low dependency) may help students to feel emotionally secure. In turn, emotional security arising from a positive student-teacher relationship may promote a better academic performance, and students' motivational attitudes and beliefs may be the mechanisms explaining this association (Roorda, Jak, Zee, Oort, & Koomen, 2017).

However, some studies have also indicated that students' and teachers' reports of their relationships are only weakly to moderately correlated (Koomen & Jellesma, 2015). A recent study by Zee et al., (2020) extended prior knowledge on student-teacher relationship quality by illustrating how the direction of associations between students' relationships with teachers and their academic adjustment vary across informants and different dimensions of motivational beliefs, academic subjects, and relational quality. These authors also found transactional pathways among negative, but not among positive aspects of the student-teacher relationship and students' adjustment. These findings support the idea that closeness, conflict, and dependency assess each unique aspects of the student-teacher relationship quality, instead of falling along an underlying continuum (Verschueren & Koomen, 2012) and are therefore likely to be differently associated with students' academic achievement.

According to Ladd (1996) school adjustment can be evaluated in four dimensions: school liking, collaborative participation, self-directedness, and adaptive behavior. In addition to the relationship with teachers, also children's relationship with peers has a role in school adjustment. Children's successful integration in their social environment and their feelings of being appreciated by peers are some of the school adjustment factors (Wentzel, 1999). Studies on this topic showed that good peer relationships had a positive effect (Boulton, Don, & Boulton, 2011; Ladd, 1990) while poor relationships had a negative effect on school adjustment (Buhs, Ladd, & Herald, 2006).

In particular, externalizing behavior has a mediating role not only between student-teacher relationship and school adjustment, but also between peer relations and school adjustment. Children displaying problematic behavior such as aggression and rule-breaking are often rejected by peers and cannot fully participate in school activities and games, so that school may become an unpleasant setting in which they are left alone and experience conflict (Demirtaş-Zorbaz, & Ergene, 2019).

However, also the relationship with teachers can influence the child's status in his/her group of classmates. Teachers as “architects of school context” (Hughes, Im, Wehrly, 2014) have a great influence on children's groups. Day by day students observe the interactions between their teachers and classmates, and even the younger pupils are able to evaluate the different quality of these interactions: approving with most students, but conflicting with some of them. Children can use these observations as a social reference orienting their personal judgment about niceness and “value” of each classmate (Hughes, Im, Wehrly, 2014). Moreover, since the student-teacher interactions are under everybody's eyes in the classroom, they become part of shared information about each child, promoting a general consent about them. As a consequence each child's reputation deriving from his/her interaction with teachers can orient peer's interpretations of that child's behavior in class and his/her level of popularity or rejection (Hymel, 1986).

In sum, it's important to know more about students' point of view about student-teacher relationship (Koomen & Jellesma, 2015) and a functional way to do so is to resort on children drawings of themselves with a teacher, since drawing is generally a well-accepted task, easy to administer. As a method of analysis we will adopt the Pictorial Assessment of Interpersonal Relationships (PAIR; Bombi, Pinto, & Cannoni, 2007), which is based on modern theories of pictorial development (Golomb 2004; Milbrath & Trautner, 2008) and has already proved to be a reliable mean to assess closeness and autonomy in relationships with different partners, such as friends, siblings and romantic partners (Laghi et al., 2013; Cannoni & Bombi, 2016; Guidotti et al., 2020). PAIR has recently extended to teacher-student relationships (Bombi, Cannoni, Galli, & Di Norcia, 2020) in line with other studies that rely on drawing to examine children's mental states and socio-emotional dimension in school (Harrison, Clarke, & Ungerer, 2007; Pezzica, Vezzani & Pinto, 2018).

In this study we will add children drawings to other classical means of investigation to examine various facets of school adaptation. Our aim is to evaluate what aspects of student-teacher relationship are more predictive of positive relationships with peers and school adjustment in general. Previous research (Koomen & Jellesma, 2015; Zee et al., 2020)

has demonstrated a fairly high level of disagreement among teachers and students about the quality of their mutual relationship and students' academic adjustment problems. Relying on both teachers and students as informants should provide a more accurate picture of the complex associations between student-teacher relationships and academic adjustment.

Given the discrepant perspectives above mentioned, we expect that the correlation between teachers' and students' perception of their relationship would not be high. Second, we expect that some dimensions of student-teacher relationship (as perceived by teachers and by students) will correlate with peer relationship and school adjustment, as shown by many studies examined in the Introduction. Finally we want to explore if students' pictorial representation of their relationship with teachers predicts school adjustment and/or the relationship with classmates; according to the attachment theory and empirical studies, a student-teacher relationship based on closeness and low dependency, should predict school adjustment and low peer rejection.

## **Method**

### ***Participants***

Participants were 177 fourth graders (99 boys; 78 girls,  $M_{age} = 9.6$ ;  $SD_{age} = 0.33$ ) from nine classes in primary schools in the outskirts of Rome. A preliminary informed consent ensuring the complete voluntariness and anonymity of children's participation was signed by parents. The research and its procedure were approved by the ethic committee of the department of afference of the authors.

Each class group has more than one teacher; the participant teachers were those spending at least 22 hours per week with the class group. No information was available about teachers' demographic characteristics.

Most of the children (85%) lived with both parents, the remaining 15% lived with the mother. Mothers were from 25 to 52 years of age ( $M = 42$ ;  $SD = 5$ ), the number of their children ranged from 1 to 5 ( $M = 2$ ;  $SD = 1$ ). The educational level of mothers who provided the required demographic information (88 % of participants) was as follows: 18.5% only grade school, 49.7% only high school degree, 31.8% college degree.

### ***Instruments***

**Teacher-perceived relationship quality.** Teachers' perceptions of the quality of their relationships with individual students were measured using the Student-Teacher Relationship Scale (STRS; Pianta, 1999) in the Italian adaptation for children 6 to 11 years old (Molinari & Melotti,

2010). This instrument measures five distinct dimensions of the relationship: Conflict, Closeness, Dependency, Insecurity and Educational Difficulties, the first two of which are very similar to the corresponding originals; the original Dependency dimension, instead, is divided in two components, which the authors labelled respectively Dependency and Insecurity: the first also includes items of conflict and appears to measure a relationship marked by jealousy and relational difficulties; the second includes items suggesting an insecure type of attachment. Finally, the fifth dimension includes three items of Conflict which are focused on the teacher's feelings of stress and lack of efficacy, as well as a reversed item of Closeness. All teacher-rated items are based on a five-point, Likert-type scale (1 = definitely does not apply to 5 = definitely applies). Coefficient alpha reliabilities were as follows: for Conflict score ( $\alpha = 0.89$ ) Closeness score ( $\alpha = 0.73$ ) Dependency ( $\alpha = 0.81$ ) Insecurity ( $\alpha = 0.53$ ) Educational Difficulties ( $\alpha = 0.77$ ).

**School adjustment.** Teachers' perceptions of each child's adjustment to school was measured using the School Adjustment Scale (SAS; Bombi, Galli, Di Norcia, 2014). This scale was developed by an original instrument by Molinari and Melotti (2009) to measure each student's learning, participation, autonomy (e.g. "school frequency" "school engagement at home" "respect for the rules and the others"). Answers are on a 4 points scale (from inadequate to excellent,  $\alpha = 0.87$ )

**Student-perceived relationship quality.** Student-perceived relationship quality was assessed through drawings. Each child was given a white sheet of  $8 \frac{1}{2} \times 11$  in. and a pencil, and required to draw oneself with the teacher; no time limits were assigned, but children completed the drawing in 20' as a maximum. The scales of Cohesion and Distancing from the above mentioned PAIR instrument (Bombi et al., 2007) were used to score the drawings. Each scale includes six subscales to be scored dichotomously (0 = absence; 1 = presence of one or more pictorial indices), pertaining to various aspects of the represented interactions (such as looking to each other, or looking away) and the spatial distribution of the figures (such as inclusion in the same area or in separate areas of the depicted scene). Cohesion is a measure of interpersonal relatedness, while Distancing is a measure of individual autonomy; they are not the poles of a continuum, as they can coexist in the same drawing (e.g. figures can look to each other, while being in separate spaces). Each drawing was rated by two independent judges, who had not participated in the data collection and were blind to the aims of the study. The two judges reached a significant level of interreliability (correlation coefficients: Pearson's: 0.84 and 0.90, with  $p < 0.001$ ). For the final score assignment,

they discussed each score on which they disagreed, until a full agreement had been reached. Alpha reliability indices in the present sample were 0.81, 0.83, for Cohesion and Distancing, respectively.

**Peer relationships.** Peer relationships were measured through Peer Nominations (Caprara, Pastorelli, 1993). Each student chose three classmates who he/she disliked for each of following activities: playing, doing an academic task, playing a sport game. They were also asked to name three children who were frequently physically and/or verbally aggressive (3 items). The number of nominations each child received for aggressive behaviours and dislike were standardized among each class to calculate Aggressive Behavior ( $\alpha = 0.88$ ) and Rejection scores ( $\alpha = 0.85$ ).

### **Data Analyses**

Pearson's correlation was calculated on teachers' and students' perceptions of their relationship, school adjustment, peer relationships. Four separate hierarchical regressions were conducted using School Adjustment or Rejection scores as a dependent variable; in all these regressions the child's sex (1 = boys, 0 = girls) was entered in Step1, Cohesion or Distancing was entered at the second step.

### **Results**

The descriptive statistics for the students' measures (drawing scores and peer evaluations) are shown in Tab.1, while those pertaining to the teachers' measures (STRS dimensions and school adjustment) are shown in Tab. 2.

*Tab.1 – Descriptive Statistics for drawing scores and peer evaluations*

		Distancing	Cohesion	Rejection	Agg. B
Boys	M (SD)	2.96 (1.94)	1.46 (1.84)	.16 (.14)	.19 (.20)
Girls	M (SD)	2.82 (1.72)	3.47 (2.16)	.13 (.11)	.09 (.13)
TOT	M (SD)	2.90 (1.84)	3.11 (2.00)	.15 (.13)	.15 (.18)

*Tab.2 – Descriptive Statistics for STRS dimensions and School Adjustment*

		Con	Clo	Dep	Ins	Edu	Adj
Boys	M (SD)	1.46 (.82)	3.99 (.70)	1.51 (.89)	3.69 (.77)	1.34 (.71)	2.39 (.69)
Girls	M (SD)	1.19 (.43)	4.12 (.72)	1.36 (.57)	3.70 (.78)	1.21 (.47)	2.50 (.52)
TOT	M (SD)	1.34 (.69)	4.04 (.71)	1.44 (.77)	3.69 (.77)	1.28 (.62)	2.43 (.62)

The correlational analyses showed that students' Distancing in their drawing of oneself with the teacher were negatively correlated with teachers' scores of Conflict ( $r = -.19$ ;  $p = .02$ ) and Dependency ( $r = -.16$ ;  $p = .05$ ) (see Table 3).

Distancing was also negatively correlated with Rejection ( $r = -.21$ ;  $p = .01$ ) and Aggressive Behavior ( $r = -.24$ ;  $p < .002$ ), while it was positively correlated with School Adjustment ( $r = .18$ ;  $p = .05$ ). Cohesion, too, was negatively correlated with Rejection ( $r = -.18$ ;  $p = .02$ ) (see Table 4).

Finally Dependency, as evaluated by teachers, was positively correlated with Rejection ( $r = .35$ ;  $p < .001$ ) and Aggressive Behavior ( $r = .42$ ;  $p < .001$ ) and Negatively with school Adjustment ( $r = -.48$ ;  $p < .001$ ; see table 3).

Tab.3 – Correlations between STRS, Drawing Scores, Peer evaluations and School Adjustment

		Drawn Cohesion	Drawn Distancing	Peer Rejection	Aggressive behavior	School Adjustment
STRS	Conflict	-.140	-.186*	.391**	.560**	-.466**
	Closeness	-.025	.066	-.213**	-.129	.312**
	Dependency	-.144	-.161*	.353**	.421**	-.477**
	Insecurity	-.038	-.067	.096	.026	-.070
	Educational Difficulties	-.098	-.112	.349**	.343**	-.505**

\* $p < .05$ ; \*\* $P < .01$

Tab.4 – Correlations between Drawing Scores, School Adjustment and Peer evaluations

		Rejection	Aggressive behavior	School Adjustment
Drawing	Cohesion	-.185*	-.130	.050
	Distancing	-.210**	-.243**	.178*

\* $p < .05$ ; \*\* $P < .01$

Through regression analyses we found that only Distancing predicted School Adjustment ( $R^2 = .05$ ;  $\beta = .18$ ;  $p = .02$ ; see Table 6). Rejection was negatively predicted by Cohesion ( $R^2 = .04$ ;  $\beta = -.17$ ;  $p = .03$ ; see Table 5) and Distancing ( $R^2 = .06$ ;  $\beta = -.22$ ;  $p = .003$ ; see Table 6). We did not find any effect of gender.

Tab.5 – Summary of Hierarchical Regressions Predicting School Adjustment or Rejection from Cohesion

Step	Variable	Rejection				School Adjustment			
		B	SE B	$\beta$	$R^2$	B	SE B	$\beta$	$R^2$
1					.014				.012
	Sex	-.03	.02	-.12		.14	.10	.11	
2					.042*				.017
	Sex	-.02	.02	-.09		.15			
	Cohesion	-.011	.005	-.17*		-.02	.03	-.07	

\* $p < .05$

Tab.5 – Summary of Hierarchical Regressions Predicting School Adjustment or Rejection from Distancing

Step	Variable	Rejection				School Adjustment			
		B	SE B	$\beta$	$R^2$	B	SE B	$\beta$	$R^2$
1					.014				.012
	Sex	-.03	.02	-.12		.14	.10	.11	
2					.060**				.045*
	Sex	-.03	.02	-.13		.15			
	Distancing	-.01	.005	-.22*		.06	.03	.18*	

\* $p < .05$ ; \*\* $p < .01$

## Discussion

Data from the correlational analyses confirmed our first hypothesis. In line with previous research (Koomen & Jellesma, 2015) we found few and low correlations between student-teacher relationships as perceived by each partner. It must be noted that, in this study, the diversity of research instruments could have stressed the divergence between the two informants. For instance, in a single drawing a child is not likely to include Conflict, since he/she has to choose a prototypical image of the relationship, in which open conflicts are more rare and less representative of the relational climate. However, Closeness and Cohesion are both measures of relatedness, and the absence of correlation speaks for a real diversity of perspectives. It is possible that students did not introduce indices of this aspect of the relationship, simply taking for granted the ongoing relationship with teachers with whom they were working since the first grade of primary school. Some convergence did emerge in the students' perception of their own autonomy (shown by high Distancing scores) and low Dependency and low Conflict from the teachers' point of view. Distancing appears a potential marker of wellbeing in students who are almost at the end of primary school, and at the threshold of pre-adolescence.

Also our second hypothesis was confirmed. In fact, we found that aggressive behavior and peer rejection were correlated with negative aspects of the student-teacher relationship as evaluated by the teachers in the STRS (Conflict Dependency, Educational Difficulties); school adjustment, instead, was positively correlated with Closeness and negatively correlated with the problematic dimensions of the STRS. From children's point of view the most significant dimension of student-teacher relationship appeared again to be Distancing, that correlated negatively with rejection and aggressive behavior and positively with school adjustment. Cohesion, however, was negatively correlated with rejection, which is in line with the studies outlining the teacher's role in building children's reputation (Hughes, Im, Wehrly, 2014).

The regression analyses showed that drawing can provide useful information about protective factors for school adjustment and peer relationships. Cohesion and Distancing in student-teacher relationship serve positive effects: the first prevents from rejection by peers and the second enhances also the students' school adjustment.

In sum, our results confirm that, as predicted by the attachment theory (Hamre & Pianta, 2001), a relationship perceived as close by the teacher goes hand in hand with school adjustment and relational wellbeing in school. Autonomy, too, seems to play a positive role both from the tea-

chers and the students perspective. In terms of predictive power, gaining autonomy from teachers seems to predict students wellbeing even more than closeness, at least as it appears from students pictorial representation. These results are generally coherent with previous researches that recommended multi informant studies to better understand relations in schools (Zee et al., 2020). A novelty element is the possible use of drawing to study student-teacher relations in primary school.

We are aware of the study limitations, first of all the marginal space given to the school performance (assessed only through one item of our SAS scale), a well known factor of school adjustment. The representation of oneself with a teacher gives voice to children, but provides only an indirect information of wellbeing or distress in a variety of school situations, that could be better assessed with other measures. Also, it could be interesting to extend the research to younger children in first and second grade, in order to better understand the evolution of the relationship with teachers and to see if Cohesion is a more central aspect of the relation for younger children. Another aspect that could be considered in future longitudinal studies is the hypothetical mediation role of rejection: in fact, it is possible that Cohesion and Distancing could prevent from rejection, and low rejection, in turn, could predict school adjustment. It could also be interesting, in continuity to Demirtaş-Zorbaz, Ergene (2019) to better explore the relation between aggressive behaviors, student-teacher relationship measured by drawing and school adjustment in a longitudinal study through primary school years.

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