MEASURING THE STUDENT-TEACHER RELATIONSHIP USING CHILDREN’S DRAWINGS IN AN ITALIAN ELEMENTARY SCHOOL

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Abstract
A growing amount of educational and developmental psychology literature has concluded that students’ affective relationships with their teachers are crucial for the cognitive and behavioral aspects of school adjustment and academic motivation, especially during the early years of school. In this study, we present data to assess the child’s perspective on the student-teacher relationship, using a children’s drawing method - Classroom Drawing - on a sample of 18 teachers and 228 children between the ages of 5 and 8. Two aspects of the drawings are analyzed: the representation of the classroom and of the teacher. The results show significant associations between the child’s representations, the teachers’ assessment of relationship quality, and the child’s scholastic achievement. The analyses provide a preliminary demonstration of the adaptability of Classroom Drawing as an instrument to assess the quality of the first relationships established between child and teacher.

Keywords: student-teacher relationship; children’s drawings; early childhood; elementary school

Introduction

A great deal of literature underlines the importance of the teacher-pupil relationship as a factor affecting aspects of children’s early scholastic

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adjustment and their subsequent academic results. More specifically, in the first years at school, a good relationship with the teacher, marked by positive qualities like closeness, affection, and open communication, with few negative features related to aspects of conflict and/or dependence, has a decisive effect on the child’s socio-emotional development (Cefai & Valeira, 2014; Fraire, Longobardi, Prino, Sclavo, & Settanni, 2013); learning progress (Downer, Rimm-Kaufman, & Pianta, 2007; Pasta, Mendola, Longobardi, Prino, & Gastaldi), and behavior (Meehan, 2004; Kauffman & Landrum, 2012).

Numerous research studies have examined the assessment of relationship quality in the educational domain (Longobardi, Prino, Marengo, & Settanni, 2016; Settanni, Longobardi, Sclavo, Fraire, & Prino, 2015). Since any dyadic relationship relies on the “reciprocal representations” of the partners involved in the interaction (Hinde, 1979), both forms of assessment must be taken into account. Most of the studies carried out to assess the teacher-pupil relationship have actually only considered the teacher’s viewpoint, thus failing to give a complete picture of the educational relationship and overlooking the pupil’s perspective (Longobardi, Gastaldi, Prino, Pasta, & Settanni, 2016; Poulou, 2017).

The pupil’s perception of the quality of the relationship with the teacher has always been investigated by means of questionnaires, even when involving pupils at pre-school or in the early years of primary school. Many studies show that the graphic method of using drawing, a family mode of expression that is natural and enjoyable for the child, is considered a useful way of communicating the personality, the child’s emotional dimension, and the affective tone with which the child “emotionally invests” in the contents represented. Children may be able to express emotions through drawings that they are unable to communicate or feel uncomfortable expressing verbally (Fury, Carlson, & Sroufe, 1997; Goldner, Edelstein, & Habshush, 2015; Kim & Suh, 2013; Pace, Zavattini, & Tambelli, 2015; Malchiodi, 1998).

A considerable number of studies have confirmed that children’s drawings reveal interactions with affectively significant others, and can be interpreted as emotional indicators of the quality of the relationship between the child and a relational partner (Clarke, Ungerer, Chahould, Johnson, & Steifel, 2002; Pianta, Longmaid, & Ferguson, 1999).

Previous studies have revealed positive associations, albeit more evident in elementary school and weaker in kindergarten (Pianta & Nimetz, 2000).
1991; Valeski & Stipek, 2001), between the children’s perceived feelings towards the teacher, recorded through questionnaires, and the assessment of closeness reported by the teachers. Research studies using the graphic method to investigate the child’s perception of relationship quality show significant links with the assessment of the relationship as reported by the teacher, especially with regard to conflict in the relationship (Harrison, Clarke, & Hungerer, 2007). This underlines an aspect reported in other works, namely the identification of conflict as the most salient among the effects of the educational relationship (Mantzicopoulos, 2005; Domitro维奇, Durlak, Staley, & Weissberg, 2017).

Certain personal characteristics attributable to the child have been seen to have a strong influence on the assessment of the educational relationship. First, the pupil’s sex has been identified as an important moderator of both the scholastic results achieved during the early years and the quality of the relationship with the educator, especially with teachers (Gunter, Caldarella, Korth, & Young, 2012; Hamre & Pianta, 2001). From the pupils’ point of view, the results obtained are not homogeneous; according to some studies that investigate the child’s assessment through questionnaires (Valeski & Stipek, 2001; Mantzicopoulos & Neuharth-Pritchett, 2003); relations between females’ pupils and teachers are closer and involve less conflict.

Another characteristic that influences relationship quality is the pupil’s scholastic achievement; this association with relationship quality is clear in studies that record the teacher’s viewpoint (Howes, 2000), while the results concerning the child’s perception are more heterogeneous (Whit, 2016). The pupil’s assessment of their relationship with the teacher is thought to be linked to the results achieved at school (Murray & Greenberg, 2000). According to some researchers, this is true only for conflict (Mantzicopoulos & Neuharth-Pritchett, 2003); for others, the relationship quality perceived by the child in infants’ school is believed to relate to self-assessed school grades and not to those given by the teacher (Valeski & Stipek, 2001).

Objectives

In the light of the above, this article aims to assess, through the graphic method, the quality of the relationship with the teacher from the point of view of the child attending the final year of infants’ school or the first three years of
elementary school, taking into account the influence of sex and school achievement. To verify the existence of a significant connection between the assessment of the educational relationship expressed by the pupil in drawings and that reported by the teacher, a comparison will be drawn between the aspects that typify the relationship, while also considering the joint effects of sex, age, school achievement, and level of school (infants’ or elementary) on the quality of the relationship as it is experienced by the child and by the teacher.

Method

Participants

The sample consisted of 228 pupils - 105 attending pre-school (average age = 5.62 years; SD=0.332) and 123 attending the first, second, or third year of elementary school (average age = 7.36 years; SD=0.980) - and 18 teachers from schools in north-west Italy (12 from pre-school - two main teachers for each class - and 6 from elementary school - the main teacher of each class). Overall, 333 teacher-pupil relationships were established (210 in pre-school and 123 in elementary school).

The teachers were all female, and mainly (72.2%) aged between 40 and 60; half of them had been teaching for over 25 years. The pupils were mainly male (52.2%). Most of the children (57.9%), more frequently the girls ($\chi^2=10.202; \text{df}=1; p<.01$) and the pre-school pupils ($\chi^2=10.798; \text{df}=1; p<.01$), were awarded a high scholastic achievement grade by the teachers (“distinction” or “excellent”); the remaining 42.1% of the pupils were classed as average achievers (30.7% were graded “good”) or low achievers (11.4% received just a passing grade). These characteristics are representative of the Italian school system (OECD, 2011).

Instruments

In considering the pupil’s point of view in assessing the relationship with the teacher, use was made of a graphic method, Classroom Drawing (Quaglia & Saglione, 1990), in which the children are asked to draw their class in whatever way they like. This instrument is designed to investigate the child’s perception of his/her “feeling good” at school, in terms of the various aspects of life in class (the relationship with the teacher and classmates, the experience of learning and of him/herself as a pupil). In view of the aims of
In this research, the aspects considered and analyzed were the figure of the teacher and the way the children represented the classroom. More specifically, the image of the teacher was assessed in terms of presence, absence, or representation by substitutes (teacher’s desk or blackboard). In keeping with the lower age limits suggested by the creators of the analysis method, only the drawings by primary school children showing both the figures in the educational dyad (teacher and pupil) were coded using the coding system drawn up by Bombi and Pinto (2001) for the graphic analysis of interpersonal relations. This produced scores for Cohesion (referring to the strength of the bond, the degree of closeness, and the degree of shared positive feelings between the figures drawn), for Distance (marking the pupil’s sense of personal autonomy), for Resemblance (showing the psychological affinity between the figures drawn and the degree to which the pupil imitated and identified with the teacher), and for the Value attributed to the teacher (in terms of dominant position and wealth of detail). The scores obtained on these four scales were broken down into three different levels (1= low, 2= medium, 3= high).

For the drawings by pre-school children, these four indicators were replaced by two different criteria representing the relationship: the distance between the figure of the pupil and that of the teacher (Rubenstein, Feldman, Rubin, & Noveck, 1987) and the amount of care taken in depicting the teacher. In considering the degree of meaningfulness attributed, the omissions (absence of the figure) and forms of disparagement in drawing the figure (small size, lack of detail, distance away, crossing out, etc.) were interpreted as elements communicating a situation that was hard to bear, fraught, or difficult for the pupil. Conversely, graphic forms of valorization of the figures (complete human figure, carefully drawn and full of detail, placed in a central position or near the main figure, in interaction with the latter) were seen to indicate positive affective tendencies, a relationship of trust as depicted by the pupil with respect to the figure drawn.

After considering the teacher’s role as mediator and transmitter of knowledge, and there after the relationship established by the pupil with the teacher as a figure of authority and source of knowledge, the depiction of the classroom was also analyzed. In Classroom Drawing, the classroom, including the number of elements and the care with which they are depicted (desks, chairs, exercise books, books, pencils, posters, maps, drawings,
flowers, equipment, etc.), is the expression of the child's peace of mind in relation to the subjects studied and the daily learning activities carried out at school. Therefore, an analysis was made of the level of detail with which each pupil depicted his/her classroom, distinguishing between very or quite carefully drawn representations of a classroom (enhanced) and those that exhibited taking little or no care (unadorned), which respectively indicate the attitude of trust or of discomfort experienced by the child with regard to his/her mental abilities, effort, and success or failure at school.

**Procedure and Design**

School principals gave their consent for the participation. Individual informed consent to take part in the research was also collected from teachers, children and their parents, along with written consent describing the nature and objective of the study according to the ethical code of the Italian Association for Psychology (AIP). The consent stated that data confidentiality would be assured and that participation was voluntary. For the pupils, both parents were asked to sign the consent form in order to have their child participate in our study.

As a first step, we computed descriptive statistics for all the study variables. Subsequently, we analyzed the elements of the drawings (i.e., presence of schoolmates, teachers, the child itself, etc.) and the dimensions of the quality of the student-teacher relationship (i.e., Closeness, Conflict, and Dependency). The classroom drawing variables were analyzed by means of a Chi square test to investigate gender differences and scholastic achievement between school levels.

Finally, we compared the perception of the STR between students and teachers by means of a Chi square test.

**Results and discussion**

Most of the pupils (80.6%) portrayed the whole figure of the teacher (as a person) in their Classroom Drawing, with the image of the teacher absent in less than one drawing out of five (19.4%). In 8.8% of these cases, the teacher was indicated by at least one representative element (usually the teacher’s desk), and in the remaining 10.6% the figure was absent entirely. No major differences that could be linked to gender were found in the way the teacher
was depicted by the pre-school or elementary school pupils. However, different representational tendencies emerged according to the level of school attended (see Table 1). Pre-school pupils, both male and female, and with both high and low scholastic performance, tended to omit the figure of the teacher ($\chi^2=30.586$; $df=2$; $p<.001$) more than the primary school pupils who, especially in first grade, indicated the teacher with at least some identifying elements, such as the board and the teacher’s desk ($\chi^2=34.124$; $df=6$; $p<.001$). The analyses conducted using the criteria of Bombi and Pinto (2001), when applied to the drawings by primary school children, revealed that most of the relationships with the teacher were marked by medium levels of Cohesion ($M=1.74$; $SD=0.612$), low levels of Distance ($M=1.59$; $SD=0.756$), medium levels of Resemblance ($M=1.84$; $SD=0.564$), and a high score on the Value attributed to the teacher ($M=2.37$; $SD=0.612$; see Table 2).

Table 1. Depiction of the teacher in pupils’ drawings

<table>
<thead>
<tr>
<th>Teacher’s figure</th>
<th>Present</th>
<th>As an element</th>
<th>Absent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-school (N=104)</td>
<td>N=77</td>
<td>4</td>
<td>23</td>
</tr>
<tr>
<td></td>
<td>%74</td>
<td>3.8</td>
<td>22.1</td>
</tr>
<tr>
<td>Primary school (N=123)</td>
<td>N=106</td>
<td>16</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>%86.2</td>
<td>13.0</td>
<td>0.8</td>
</tr>
<tr>
<td>Total</td>
<td>N=183</td>
<td>20</td>
<td>24</td>
</tr>
<tr>
<td></td>
<td>%80.6</td>
<td>8.8</td>
<td>10.6</td>
</tr>
</tbody>
</table>

Table 2. Levels of relational dimensions analyzed in primary school drawings and assessed by teachers

<table>
<thead>
<tr>
<th></th>
<th>Level</th>
<th>High</th>
<th>Medium</th>
<th>Low</th>
</tr>
</thead>
<tbody>
<tr>
<td>Children’s drawings</td>
<td>Cohesion</td>
<td>8.9</td>
<td>56.1</td>
<td>35.0</td>
</tr>
<tr>
<td></td>
<td>Distance</td>
<td>16.3</td>
<td>26.8</td>
<td>56.9</td>
</tr>
<tr>
<td></td>
<td>Resemblance</td>
<td>8.9</td>
<td>65.9</td>
<td>25.2</td>
</tr>
<tr>
<td></td>
<td>Value</td>
<td>50.4</td>
<td>36.6</td>
<td>13.0</td>
</tr>
<tr>
<td>Teachers’ perceptions</td>
<td>Conflict</td>
<td>-</td>
<td>5.4</td>
<td>95</td>
</tr>
<tr>
<td></td>
<td>Closeness</td>
<td>14.1</td>
<td>83.8</td>
<td>2.1</td>
</tr>
<tr>
<td></td>
<td>Dependence</td>
<td>0.6</td>
<td>39.4</td>
<td>60.1</td>
</tr>
</tbody>
</table>

The pupil’s scholastic achievement was a variable that influenced how the teacher was depicted, or more often was not drawn ($\chi^2=13.639$; $df=4$; $p<.01$); among primary school pupils, average or low achievers produced a
high Cohesion score ($\chi^2=10.499; \text{df}=4; p<.05$) or a low level of Distance ($\chi^2=12.116; \text{df}=4; p<.05$) less often than their classmates. The classroom appeared very or quite carefully drawn in 58.6% of the representations, and unadorned or with little detail in the remaining 41.4%. In this case, sex ($\chi^2=9.022; \text{df}=1; p<.01$), school level ($\chi^2=16.312; \text{df}=1; p<.001$), and scholastic achievement ($\chi^2=19.788; \text{df}=2; p<.001$) had a significant effect on the level of detail included in the classroom drawing. Those who took less care with the decoration of their classroom were male pupils, pre-school children, and pupils who had experienced scholastic failures more often. More specifically, pre-school girls decorated their drawings less than girls at primary school ($\chi^2=30.001; \text{df}=3; p<.001$), while low-achieving primary school girls enhanced their drawings more than their male classmates with similar achievement levels ($\chi^2=10.819; \text{df}=3; p<.05$). Among the boys, the low or average achievers tended to draw unadorned classrooms more often than their high-achieving classmates ($\chi^2=19.637; \text{df}=1; p<.001$).

Relationship Perceived by the Teacher

According to the teacher sample, the vast majority of relationships with the pupils featured low levels of Conflict ($M=1.05; SD=0.226$), medium Closeness ($M=2.12; SD=0.385$), and low levels of Dependency ($M=1.41; SD=0.504$; see Table 2). The disproportionate levels of the indicators of Asymmetry and Kurtosis in scores on the Conflict sub-scale (Asymmetry = 3.962; Kurtosis = 13.781) were evidence of the teachers’ tendency to describe their relationships with their pupils as lacking conflict, highlighting the difficulty of recognizing extremely hostile, cold relationships (there were no relationships with high levels of conflict).

The pupil’s sex affected the perception of Closeness ($\chi^2=11.654; \text{df}=2; p<.005$) at pre-school and of Dependency at primary school ($\chi^2=13.237; \text{df}=2; p<.005$); closer, less dependent relationships, according to the teachers, were those with girls rather than boys.

Scholastic achievement influenced the relationship, especially with male pupils, in all aspects; at primary school, the relationships that were more conflictual ($\chi^2=9.302; \text{df}=2; p<.01$; see Figure 1), more dependent ($\chi^2=11.317; \text{df}=4; p<.05$), and in the latter case, with reference to relationships with male pre-school pupils, less warm ($\chi^2=23.840; \text{df}=4; p<.001$; see Figure 2), were those with low-achieving pupils. The teachers at the two different school levels...
did not recognize the quality of their relationships with male pupils as being significantly different, although there were tendencies to stress different aspects of relationships within each class. They saw relationships with the first-grade boys as less close, and those with third-grade low-achieving boys as being more dependent.

Scholastic achievement

<table>
<thead>
<tr>
<th></th>
<th>High</th>
<th>Low/Medium</th>
</tr>
</thead>
<tbody>
<tr>
<td>Predicted marginal means</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1.12</td>
<td>1.10</td>
</tr>
<tr>
<td></td>
<td>1.08</td>
<td>1.06</td>
</tr>
<tr>
<td></td>
<td>1.04</td>
<td>1.02</td>
</tr>
</tbody>
</table>

Primary school

School

Pre-school

Primary

Predicted marginal means of Conflict

Predicted marginal means of Closeness

Figures 1 and 2. Joint effect of achievement and school level respectively on the perception of Conflict (Figure 1) and Closeness (Figure 2)

Comparing the Pupils and Teachers’ Perceptions of the Relationship

With regard to the link between the child’s point of view (as it emerged from analysis of the drawings) and the teacher’s perception of the quality of the relationship (recorded using STRS), it emerged that in Classroom Drawing, the depiction of the teacher as an element (board or desk) appeared more frequently in the work of children with whom the teacher perceived a relationship marked by a medium level of Conflict ($\chi^2=8.029$; df=2; p<.05) and a low score on Closeness ($\chi^2=13.088$; df=4; p<.05). The image of the teacher was rarely omitted by pupils with whom the teacher shared a close, warm, intimate relationship (Figure 3). For the primary school pupils, the pictorial indicators analyzed using the coding method of Bombi and Pinto (2001) were significantly tied to the conflictual aspect of the relationship recorded by the teacher; lower scores on the Value attributed to the teacher’s role ($\chi^2=10.411$;
df=2; p<.01), lower levels of Cohesion ($\chi^2=6.164; \text{df}=2; p<.05$), and greater Distance ($\chi^2=7.532; \text{df}=2; p<.05$) characterized the drawing of pupils for whom the teachers recorded a medium level of Conflict, rather than a low level.

The classroom was also less detailed if the pupil who drew the picture was one with whom the teacher perceived a Conflict ($\chi^2=7.779; \text{df}=1; p<.01$) and a medium level of Dependency ($\chi^2=8.986; \text{df}=1; p<.005$). Meanwhile, the pupils that included greater detail attributed a higher value to learning, showed more interest in school activities, tended to feel more secure, and had a less conflictual and dependent relationship with the teacher.

For both the teachers and the pupils in the sample analyzed, the quality of most educational relationships was positive, while the data concerning the link between perception of relationship quality and the main variables influencing the pupil-teacher relationship tended to reflect the results found in the literature (Prino, Pasta, Gastaldi, & Longobardi, 2016).

In terms of the association between relationship quality and the pupil’s sex, the teachers perceived some aspects of the relationships with girls as being of higher quality; according to the pupils, however, gender did not have a great influence on how the bond with the teacher was perceived, but it did affect their own assessment of their ability as learners. Indirectly, therefore, the teachers’ tendency to find less cohesion and affinity in relationships with male pupils
could be connected to the boys’ lack of faith in their mental abilities and their difficulty in responding easily to the cognitive demands made by the teacher in terms of effort and scholastic achievement (Quaglia, Gastaldi, Prino, Pasta, & Longobardi, 2013).

Indeed, for both pupils and teachers, scholastic achievement was a variable closely associated with the perception of affinity and hostility experienced in educational relationships. High scholastic achievement facilitated the pupil-teacher relationship, especially for male pupils. The assessments of pupils and teachers largely related to the aspect of conflict; conflict was confirmed, as also shown in the literature, as the element of mediation and the aspect most indicative of the effects of the relationship.

**Conclusions and limits of the research**

In spite of some limitations (the small sample size, the deviation from a normal distribution of the conflict dimension perceived by the teacher, the fact that the study considered some variables relating to the child’s experience in class, such as ability to adapt socially, family history, length of time the interaction partners had known each other, etc.), the study had a positive outcome. First, the significance of the association between the pupils’ relational representation via their drawings and the teacher’s assessment through the questionnaire, and second, the connections with scholastic success and the correspondence with the data found in the literature, enabled us to confirm the validity of the graphic method used here as an instrument of assessment and a means of gaining knowledge of the child’s experience of the educational relationship.

The way children perceive their relationship with the teacher, measured by means of drawing, can therefore provide a range of important data on the quality of the relationships established in class, enable younger pupils to express themselves without speaking, and provide a viewpoint that may differ from that of their partner in interaction.

Acknowledging that relationship quality is affected by the combination of the pupil’s school results, sex, and age also allowed us to note that the pupil’s achievement of the cognitive goals set for the class is important for both teaching purposes and in an emotional sense.
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