EXAMINING CROSS-CULTURAL VALIDITY, IN A EUROPEAN EDUCATIONAL SETTING, OF THE STUDENT-TEACHER RELATIONSHIP SCALE

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ABSTRACT

The following study proposes a comparative analysis of the work carried out in Greece, Spain and Italy in relation to the process of adaptability and validation of the Student-Teacher Relationship Scale (Pianta, 2001). The questionnaire, originated within a US context, aims to evaluate the relationship teacher-pupil on the basis of the three, distinct dimensions of Closeness, Conflict and Dependency. Each study has been viewed taking into account methodology, analysis and conclusions: although differences have been registered in each section, our work has highlighted a strong uniformity within the structure itself of the instrument of study.

All studies have shown similar consistency indexes, even though some changes had to be made to the questionnaire in order to adapt it to each given reality; such changes are in great part related to the scale of Dependency. Nevertheless, the efficiency of the questionnaire itself has been proved: the STRS scale offers valid and trustworthy psychometric characteristics and appears to be adequate for the in depth study of the relationship between a teacher and his/her pupils.

Keywords: STRS, student-teacher relationship, cross-cultural analysis, adaptation, school.

Childhood is the period of human life where the most relevant changes happen. Such evolutive transitions are particularly visible is a educational system as it is, indeed, in school that children relate and communicate the most with their peers and adult. It is known that the more proficient their interaction is, the better their educational results are; as a consequence, good relationships in school become fundamental not only in order to orient the child towards a successful adaptive behavior, but also to improve his or her performance.

The teacher-student relationship has been a central topic of investigation in the past twenty years, and it has proved the existence of its strong correlation with a child's behavior and his/her performance in school. This study embraces Attachment Theory, which revolves around the relationship between pupils and their teacher, who is perceived as an "alternative caregiver" (Howes,

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1999); it will also consider the level and quality of the child's interaction with adults in its family context (Davis, 2003).

The attempt of the child to extend his/her relational model to the teacher is an essential condition for his/her healthy emotional and social development (Stuhlman & Pianta, 2002): basically, children with a strong bond with their teacher, not only feel emotionally safe with them, but also show a stronger learning motivation (Pianta, 1999). Children with a less positive relationship with their children appear to have adaptation issues, difficulties in relating to others and, at times, behavioral issues (Doll & Lyon, 1998).

The teacher-student relationship can be therefore considered an essential resource for the child's development both is a school and social context, as it has been shown by many a research. Baker (2006), for instance, has demonstrated how a good teacher-student relationship is essential for the healthy social development of the child; Birch & Ladd (1997) have underlined a correlation of the same with the child's full development as a pupil; Connel and Wellborn (1991) have studied in depth the influence a good teacher-student relationship can have of a child performance, with particular attention given to his/her participation in didactic activities. Moreover, it has been observed how the teacher-student relationship could positively influence the smooth integration of a child in a new class (Ahnert *et al.,* 2006) as well as the well-being and performance of differently abled children (Lerner, *et al.,* 2003; Henricsson & Rydell, 2004) and foreign children (Saft & Pianta, 2001).

As the relevance of the teacher-student relationship has been demonstrated, many a country have implemented national programs to prevent negative socio-psychological behavior, mostly based on the development of a healthy and positive connection between the teacher and the child: the aim is to favor a higher level of integration which should consequently increase the constructive integration of the child in a scholar background and improve his/her performance. A proper instrument for the study and measuring of the teacher-student relationship become thus essential for a full analysis of such complex and varied situations.

The studies conducted on the relationship teacher-student have been largely sustained by a in depth analysis of the theory attachment, which focused on the link parent-child, and which have been adapted and applied to non parental adults. These instruments include observational methods for the evaluation of the dyadic interaction, such as the "Strange Situation" (Ainsworth, Blehar, Waters & Wall, 1978) and the "Attachment Q-sort (Waters & Dean, 1995). Pianta and his collegues (1992, 1994, 1997, 2001) have developed a self-report instrument aiming at evaluating the teacher's perception of his/her own attitude and feelings towards each single pupil in the class. Such instrument has been names STRS (Student-teacher relationship Scale) and it is applicable to children between 3 and 8 (Birch & Ladd, 1998; Howes & Richie, 1999). The final version of the scale, already largely used in the anglosaxon world, consists of 28 items, marked on a 5 points Likert scale (from entirely not applicable 1, to fully applicable 5); the structure of the questionnaire has allowed researchers to identify three distinct dimensions within the relationship: closeness (Cronbach's = .86), conflict (Cronbach's =.96) and dependence (Cronbach' s =. 69).

The sub-scale of closeness (11 items) refers to the emotional and affective relationship between child and teacher. Such relationship seems to favor the child's positive attitudes, encouraged by open communication with the teacher, fulfilling perception of didactical activity, low levels of behavioral issues and, especially, by the presence of positive, emerging social skills (Burchinal, Cryer, Clifford & Howes, 2002; Pianta and Stuhlman, 2004; Silver, Measelle, Armstrong & Essex, 2005). The teacher becomes a support figure as well as an important staple for the emotive developmental process of the child (Pianta, Hamre & Stuhlman, 2003).

The sub-scale of conflict (12 items) measures the degree of negativity, disagreement and poorness of the teacher-student relationship; these attitudes usually result in a low level of the child's participation in didactical activities (listening, partecipation and collaboration) and an evident

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lack of social skills. This dimension can cause stress and could also, with time, degenerate into highly negative behaviors of the child (Hamre and Pianta, 2001; Mantzicopoupos, 2005).

The sub-scale of dependence (5 items), measures the child's inability to develop autonomally (Pianta, 1999). He/she refuses to explore his/her surroundings, attitudes towards didactic activity do not fully develop and also his/her interaction with other pupils results impaired. This dimension has not been fully considered by researchers, yet (Jerome, Hamre & Pianta, 2009).

Pianta (2001), moreover, has proposed a shorter version of the STRS, called STRS-SF (short form): it consists of 15 items, devided between two dimensions only, that of conflict and that of closeness. The instrument does not, therefore, take into account the dimension of dependence. This version is particularly popular for research reasons, as it is quicker for teachers to compile it (Ang, 2005).

The results of both versions of the STRS suggests the presence of a negative correlation between the sub-scales of closeness and conflict, especially when applied in different cultural contexts (Cornelissen & Verschueren, 2002). Beyazkurk & Kesner (2005) have proven that in turkish primary schools, all teachers have extremely high levels of dependence with their pupils; The same conclusions have been reached by Gregoriadis & Tsigillis (2007), who have emphasized the adamant cultural differences between the american and greek societies-samples of the study: individualist the first, collectivist the latter. As a consequence, it has become evident that, should the STRS be used to examine the quality fo the teacher-student relationship in different countries, the instruments would need a certain level of adaptation to the context in which it is going to be used; as the STRS has been created and validated in a North-American context, the general value of its results within other societies, including Europeans', still needs to be fully demonstrated.

Even though the STRS has shown to possess the right psychometric qualities necessary for a proper evaluation of construct, internal consistency, predictability and concurrent validity (Webb & Neuharth-Pritchell, 2011; Fraire, Longobardi, Prino Sclavo & Settanni, in press; Cornelissen & Verschueren, 2002; Gregoriadis & Tsigillis, 2007. 2008; Pianta, 2001; Lapp-Payne, 2003), the lack of psychometric information in relation to the cross-cultural comparison of the questionnaire results, which are essential in order to fully evaluate the efficiency of the STRS in a non North-American context. As a consequence, the objective of this study to apply the STRS to an European context (Italy, Spain, Greece), keeping in mind cross-cultural differences and prove its attendibilty in a non North-American context.

THE GREEK STUDY (GREGORIADIS &TSIGILLIS, 2008)

Aim
Objective of this study is to investigate the applicability of the STRS in the Greek cultural context.

METHOD

Participants
The following people have taken part in this study: 67 kindergarten teachers, all women, with an average age of 41.1 years and 20.3 years of teaching experience. The total number of STRS analyzed is 403, of which 195 boys and 208 girls (average age: 5.8 years). The school which participated in the project all belong to urban and suburban contexts within the province of Thessaloniki, in the north of Greece.

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Materials and procedures

Every teacher has compiled a STRS for 6 children, chosen randomly among their pupils. The STRS has been translated into Greek by one of the author of the article; then a bilingual student has translated the results back from Greek into English, and the text has been smoothed out where needed. A pilot study involving 11 kindergarten teachers has been carried out in order to ascertain the functionality of the translated STRS and its applicability to the Greek educational context. Each teacher compiled the STRS for 6 children, usually 3 boys and 3 girls, chosen randomly within their class.

RESULTS

Analysis of the Dimensions

The team has carried out an explorative analysis, in order to investigate the psychometric properties of the STRS in a non North-American context. A parallel analysis has highlighted the presence of the same three factors of the original version created by Pianta, factors which explain the 44.20% of variations. Significant correlations have been detected between the following scales ($p<.01$): negative between Conflict and Closeness (-.44) and positive between Dependence and Closeness (.35).

Principal components and differences between the adapted and the original versions

Two items have been eliminated in the Greek version: the item number 6 (which focused on the child's reaction to corrections), which belongs to the scale of dependence in the original, and the item number 25 (related to the child's exploitation of crying in order to obtain something from the teacher).

Item 21, related to the imitation of the teacher's behaviors, belongs to the scale of closeness in the original questionnaire, but it has been moved to the scale of dependence in the Greek's.

The scale of conflict is composed by 11 items, that of closeness by 10 and that of dependence by 5.

Internal consistency

Internal consistency is good, for both the total scale and the sub-scales (=.90 for the total, =.871 for conflict, =.790 for dependence and =.868 for closeness).

Differences related to socio-demographic variables

In order to investigate gender differences in relation to the three sub-scales, the study has applied a *multivariate analysis of variance.* Results show a *significant main effect,* Wilks' Λ= .945, $F(3, 399)= 7.72$, $\rho < .001$, 2=.055. Through the univariate ANOVAs it is shown that, if compared to girls, boys obtain higher marks on the scale of conflict ($F(1, 401)= 15.45$, $p< .001$, 2=.037) and lower on that of closeness ($F(1,401)= 8.81$, $p <.003$, 2=.021) and dependence ($F(1,401)= 5.90$, $p=.016$, 2=0.15).

THE SPANISH STUDY (MORENO GARCIA, MARTINEZ-ARIAS, 2008)

Aim

The aim of the study is to present the results of the explorative analysis related to the Spanish translation of the STRS, and their comparison to those of the original American version.

METHOD

Participants

44 teachers have joined the study: they evaluated their relationship with some of their pupils. In total, the experiment has taken into consideration 345 children, 50,5 % boys, 49,5% girls (average age 6,5 years, dstd=3,3). 61% attended kindergarten, 39% primary school. All schools belonged to the Independent Community of Madrid.

Materials and Procedure

The STRS has been compiled by each teacher in relation to 8 pupils, 4 boys and 4 girls, randomly chosen. The questionnaire was submitted along with an evaluating scale of the pupil's characteristics and behaviors related to three different variables: socio-demographic variables, behavioral characteristics, cognitive and educational abilities, social skills. All items have been evaluated through a 5 points Likert scale

The Spanish adaptation of the questionnaire has been carried out following the norms implemented by Van de Vijver and Hambleton (1996); the original scale has been translated in spanish first then, after a comparison with the original, it has been back-translated. The pilot study involved 10 primary school teachers, in order to highlight any possibile compiling issue.

RESULTS

Analysis of the Dimensions

The analysis has followed the pattern of the original American study: the data collected have been sorted through an explorative analysis which followed the Analysis of Principal Components' method, with a Varimax rotation. The *screen test* has allowed to extrapolate the same three factors already identified by Pianta, which explain 47,1% of variation (48,8% of the original study).

Principal components and differences in relation to the original version

Some variations have been noticed between the original and the Spanish versions of the STRS. Item number 6, related to a child's reaction to corrections (originally part of the scale of dependence) has been here associated with that of conflict. Item number 21, related to a child's imitation of the teacher's behaviors, belonged to the scale of closeness, whereas it has been moved here to that of dependence. Item number 25, related to a child's use of crying in order to obtain attention/rewarding from the teacher presents similitudes to both the scale of conflict (.26), where it originally belongs, as well as that of dependence (.42). The scale of conflict is formed by 12 items, that of closeness by 10 and that of dependence by 6.

Internal consistency

The obtained dimensions show a good internal consistency with alpha of 0,9 for the conflict and closeness components and of 0,7 for that of dependence.

Differences related to socio-demographic variables

Significant differences have been recognized in the scores obtained by boys and girls, in relation to the analysis of the t of student. Girls tend to obtain higher scores in relation to the scales of closeness (t=-2.33; p<0.01) and dependence (t=-2,36; p<0.01), whereas boys have higher scores in that of conflict (t=1.91. p<0.05). Moreover, a reverse correlation has been discovered between the children's age and the scores in the dimension of closeness, which decreases with the increase of age (0,203, p<0.01).

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The study has also discovered interesting correlations between the three dimensions and the evaluated characteristics in the child. Closeness and conflict correlate with the majority of the evaluated characteristics, whereas dependence seems to be more strongly associated with the evaluation of the pupil's cognitive capabilities.

THE ITALIAN STUDY (FRAIRE, LONGOBARDI, PRINO, SCLAVO, SETTANNI, 2012, IN PRESS)

Aim

The purpose of this study is to examine the structure validity of the Student-Teacher relationship scale in an Italian educational setting.

METHOD

Participants

210 teachers have participated to the project, all belonging to kindergarten and primary school. 92% of teachers were women. The sample is well balanced, both in relation to teaching experience and age. The teachers have compiled 1256 questionnaire, for the same amount of children of an age comprise between 6 and 9 years. (M=6.0, SD=1.6). 550 children attend kindergarten, 706 one of the first 3 years of primary school.

Materials and procedures

The project has been organized around 4 focus groups, each formed by 12 teachers. Two groups concentrated on the analysis of the dimensions involved in the teacher-student relationship and on the possibility to apply the STRS to an Italian context. The other 2 groups have evaluated the clarity and fidelity of the translated instrument to the original, on the basis of their own teaching experience. The translation of the questionnaire has been carried out by two bilinguals and has followed the process of translation and back translation suggested by Van de Vijver & Hambleton (1996).

Analysis of the dimensions

The analysis of the dimensions has followed 4 major phases. The initial sample was randomly divided into two subsamples each composed of 628 children. Data from the first sample were analyzed applying an exploratory factor analysis as done by Pianta (oblique Geomin rotation and Parallel Analysis). Then was conducted a confirmatory factor analysis. Afterwards, the reliability of the three subscales was computed on the second (CFA) sample using Cronbach's Alpha. Finally, was conducted demographic subgroup comparisons based on the overall sample for all the three subscales and was computed correlations of the three subscales with academic outcomes and motivation indicators.

An explorative analysis has highlighted the presence of correlations among all scales. In particular, the scale of conflict is inversely correlated to that of closeness (-.227) and directly correlated to that of dependence (.331). Closeness present a feeble, yet existent, correlation with dependence (.110).

Principal components and differences in relation to the original version

The Italian version of the STRS consists of 22 items. The items number 4-6-12-19-21-25 have been eliminated: 5 of them had very low levels of communality (<.30) (items 4, 6, 12, 19, 21). Item 25 cross-loaded on two different factors (factor loadings >.40 on Conflict and Dependency) and the higher factor loading was on Dependency factor and not on Conflict as expected.

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The questionnaire is composed as follows: 10 items for conflict, 8 for closeness and 4 for dependence.

Internal consistency

Internal consistency has positive values, especially within the dimensions of closeness (alpha=.91) and conflict (alpha=.86). The value related to the value of dependence results lower (alpha=.69).

Differences related to socio-demographic variables.

Some correlations have been detected between the questionnaire's scales and the children's gender: boys appear to have higher levels of conflict ($F_{(1,1254)}= 14.78$, $p<.01$). On the other hand, closeness ($F_{(1, 1254)}=16.78$, $p<.01$ and dependence ($F_{(1, 1254)}=4.88$, $p<.05$) show an opposite pattern; the main differences between the two types of school are to be found in the inverse correlation between the rising of the school grade and the diminishing of the values of conflict ($F_{(1, 254)}=71.65$, $p<.01$) and dependence ($F_{(1, 1254)}=86.12$, $p<.01$).

GENERAL CONCLUSIONS

The three studies analyzed in this article have taken into consideration the original version of the STRS, consisting of 28 items (Pianta, 2001): they all preceded in time the affirmative studies carried out by Webb & Neuharth-Pritchell (2011). For a full comparison of the results obtained, see table 1.

	Greek study (2008)	*Spanish Study (2008)*	*Italian Study (2012)*
Children involved	403 (Average age= 5.8 years)	345 (average age=6,5, S.D.=3,3)	1256 (average age=6.0 , SD =1.6)
Teachers involved	67	44	210
Explained variation	44,29%	47,1%	-
Total ítems	26	28	22
Closeness items	10 items (1-3-4-5-7-9-12-15-27-28)	10 items (1-3-4-5-7-9-12-15-27-28)	8 items (1-3-5-7-9-15-27-28)
Conflict Items	11 items (2-11-13-16-18-19-20-22-23-24-26)	13 items (2-6-11-13-16-18-19-20-22-23-24-25-26)	10 items (2-11-13-16-18-20-22-23-24-26)
Dependence Items	5 item s(8-10-14-17-21)	6 items (8-10-14-17-21-25)	4 items (8-10-14-17)
Eliminated ítems	6 – 25	-	4 - 6 - 12 - 19 - 21 - 25
Alpha of Cronbach	Conflict α = .87 Closeness α = .87 Dependence α = .79	Conflict α = .9 Closeness α = .9 Dependence α = .7	Conflict α = .86 Closeness α = .91 Dependence α = .69

The original structure of the questionnaire with its division in three major dimensions has been confirmed, albeit with small juxtapositions among them. The most relevant differences are visible in the Italian study , which proposes an instrument based of 22 items. The elimination of a higher number of items may, nevertheless, be due to the fact that the Italian analysis is the only one of a affirmative type.

All three projects are bound -and in this opposed to the original American work- by the position of items 6, 21 and 25. As already mentioned, in the Greek, Spanish and Italian studies, such items are associated fulfill different factors from those fulfilled in the American STRS, to the point that, in some cases, their suppression has been proposed. In all studies the scale of dependence appears

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notably less relevant than in the original model: this seems to be the construct marking the difference between the American and the Southern European contexts.

It seems apt to extend to the Spanish and the Italian educational contexts what Gregoriadis & Tsigillis (2008) have applied to the Greek, that is, that in collectivist societies love and unconditional acceptance towards children are not considered a dependent behavior, but a true sign of the emotional involvement of both child and teacher in the relationship.

In an individualist society such as the American, on the other hand, autonomy and independence represent the true objectives to achieve, whereas all behaviors involving a certain amount of dependency are strongly discouraged. Such cultural differences, especially when referring to the dimension of dependence, point at the preferable choice, at least in a European context, of the STRS S-F where such construct is present .

Nevertheless, all studies carried out in a European context have demonstrated the true validity of the instrument: the STRS scale is composed by psychometric characters which are valid and trustworthy, hence resulting greatly useful in order to investigate our knowledge of the teacher-student relationship.

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