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# Successful transition to elementary school and the implementation of facilitative practices specified in the Reggio-Emilia philosophy

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Systematic, mandated facilitation of school transitions is an important but understudied aspect of the Reggio-Emilia approach to early childhood education admired internationally as best practice. We studied the links between Northern Italian transition practices and academic achievement, school liking, cooperativeness, and problem behaviors. We followed 288 students across a transition from preschool to elementary school. Schools varied in their implementation of transition practices. High implementation of Reggio-type transition practices was related to significantly more school liking and significantly fewer problem behaviors after the transition. At follow-up at the end of the post-transition year, high-implementation schools were still characterized by lower levels of problem behavior. These data indicate that the facilitation of school transitions in the Reggio-Emilia tradition is associated with successful post-transition adjustment.

Keywords: Behaviour problems, elementary school students, Italy, Reggio-Emilia, school environment, school transition, student attitudes

Grimley and Bennett (2000) maintain that helping children begin school ready to learn is a formidable challenge in both developed and non-developed countries. The co-occurrence of enhanced social and intellectual development, surrounded by greater and more complex social and cognitive stimulation, makes the transition from pre-kindergarten to formal schooling a unique and important experience (Entwisle & Alexander, 1998). There is frequently a dramatic increase in demand to focus attention, sit in chairs, and engage in cognitively strenuous activities for many hours of the day (Sink, Edwards, & Weir, 2007). *Transition practices* are strategies employed by the school system to help ease transitions, often by facilitating connections between family, children, and teachers at the pre-transition and post-transition institutions. The goal of the present study was to explore links between the implementation of Reggio-Emilia transition practices in Northern Italy and children's school adjustment.

## **School transition practices**

Laverick (2008) identifies several successful transition practices reported in the literature, including teacher home visits before the beginning of school, orientation programs for parents and students, and sending letters welcoming students. However, in practice, teachers tend to utilize practices that minimize the burden on their time, such as impersonal dissemination of information and short meetings at the beginning of, rather than prior to, the school term (Pianta, Cox, & Early, 2001). Complicating matters, there is often much less contact between parents and preschool teachers than teachers would welcome (Koutrouba, Antonopoulou, Tsitsas, & Zenakou, 2009).

There have been surprising few empirical studies linking the use of transition practices to child outcomes. Schulting, Malone, and Dodge (2005) found that the more frequent use of transition practices increased child academic achievement scores one year later. Similarly, LoCasale-Crouch, Mashburn, Downer, and Pianta (2008) discovered that more frequent implementation of transition practices was associated with fewer child behavior problems and better school integration. However, the use of these practices is not universal nor fully institutionalized in the USA, where these studies were conducted. In contrast, transition practice is an integral part of the Reggio-Emilia approach to early-childhood education in Northern Italy.

## **The Reggio-Emilia approach**

The Reggio-Emilia approach is a pedagogical model for young children, widely implemented in Northern Italian cities and revered by educationalists around the world. The approach is heavily immersed in a variety of developmental theories (e.g. Piaget, Vygotsky) and stresses four important aspects: The image of the child, negotiated learning, documentation, and social relationships. In the Reggio-Emilia system, the child is construed as being curious and social in nature, and as a researcher and constructor of knowledge. The focus is on developing thinking ability in the child by negotiated learning. The inclusion of family and peers is also a central element (Edwards, Gandini & Forman, 2012).

Within this context, successful school transitions are a major concern because of the central role of the teacher as guide, co-learner, and facilitator. Changing the identity of the person who plays these roles is seen as crucial to future learning and adjustment. Parents also play an important teaching role and help guide children on their journey from one collaborative learning relationship with a teacher to a new one. In Italy, sensitivity to the problems inherent in school transitions is so high that Italian law mandates specific measures to facilitate post-transition adjustment.

The most complete and coherent articulation of the role of transitions in the Reggio-Emilia philosophy is provided in a book edited by Luciano Cecconi (2012), a professor at the University of Modena at Reggio-Emilia who has been involved with the Reggio-Emilia schools in developing and implementing their innovative approach to preschool education. Cecconi observes, first of all, that the transition experience occurs throughout one's lifetime, with biology providing natural mechanisms for adjusting at times of transitions. Schools, however, require sudden, discrete and drastic transitions at different school levels that are not coordinated with the natural processes of human development. Therefore, it is the responsibility of the schools and not the child to reduce the unnatural shifts that are required. Aside from the transition procedures discussed earlier, Cecconi insists that the schools must approach

transition in a highly systemic way. Teachers at the sending and receiving schools must get to know each other and what each school requires of children. One way of doing this, for example, is by having teachers and principals of the preschools sit on the advisory boards of the elementary schools, and vice versa. Such 'vertical' collaboration (i.e. across different school levels) must be complemented by 'horizontal' collaboration, meaning that the teachers responsible for facilitating transition must transmit their knowledge of the child and of the two school settings to other people in the children's lives, including fellow teachers, pupils, and parents. Cecconi mentions another important function of school transition. When Jerome Bruner visited the Reggio-Emilia project early in its development, his Italian colleagues asked him what would be the best way of evaluating its success. Bruner responded that the best way of evaluating the success of the preschools would be to see how well the pupils transition to elementary school. Cecconi and his colleagues present a recent qualitative study showing that marked discontinuities remain in the way teachers think about the sending and receiving schools.

Corsaro, Molinari, and Rosier (2002) provided detailed descriptions of the application of the *scuola d'infanzia* philosophy to the facilitation of the transition from kindergarten to first grade. For example, teachers are trained to pay special attention to children's questions about the upcoming transition and recognize that the children's eagerness to be grown up and to be promoted to first grade is accompanied by considerable anxiety. Kindergarten teachers also deliberately change the procedures for small-group class discussions in order to get the children accustomed to taking turns, speaking one at a time, as they have to do in first grade.

## **The present study**

The goal of the present study was to explore links between the degree to which the Reggio-Emilia approach is implemented in Northern Italian schools and children's school adjustment. Indices of school adjustment included constructs related to children's feelings about school (e.g. school liking, school avoidance), child problem behaviors (e.g. internalizing problems, externalizing problems) and competencies (e.g. co-operation), and academic achievement. We hypothesized that use of transition practices would be significantly related to successful school transition, especially for those practices which promote the coalescence of a child's various worlds. Specifically, we hypothesize that greater use of transition practices would be related to more successful transitions as indicated by feelings toward school, academic achievement, and child behavior.

## **Method**

### **Participants**

Participants at the start of the study were 288 children (131 boys) attending 24 preschools (*scuole d'infanzia*) in the cities of Genoa and La Spezia, Italy. Genoa and LaSpezia are both industrial and port cities and the sample spanned a wide range of socioeconomic levels, Approximately 15%/16% of fathers/mothers held university degrees, 56%/54% held secondary or technical-school diplomas, and 27%/29.2% finished only middle school. As well, approximately 14%/8% of fathers/mothers held professional positions, 18%/34% were employed by large firms, 16%/13% were employed in factories or

port facilities, and 22% of mothers worked at home as housewives. We estimate that 5% of the sample consisted of first- or second-generation immigrants to Italy.

The study began in the autumn of the final year of *scuola materna* (preschool) when children were 5–6 years of age. *Scuola materna* is free and, although it is not compulsory, is attended by almost all Italian children of preschool age. The participants, their parents, and their teachers provided data in the autumn and spring of the year preceding and the year following the transition to *scuola elementare* (elementary school), which begins at age 6 years and spans five years.

### **Procedure**

After the study received REB approval and approval from the school authorities of the two participating municipalities, preschools were invited by telephone to participate. Parents were invited by university-based research assistants for individual sessions in which they provided informed consent and completed the various measures. The same research assistants administered the measures individually at school to the participating children. Teachers completed the instruments for all participants in their classes. All data were collected in the second and ninth months of the school years before and after the transition. The consent rate was 91%.

### **Measures**

All instruments (with the exception of the Peabody) were translated from English to Italian by the second author and back-translated into English by the first author to ensure the accuracy of the translation. Confirmatory factor analysis (CFA) was applied to the data from all instruments that were translated from English.

#### **Children's feelings about school**

Both teachers and children provided reports of children's feelings about school using the School Liking and Social Avoidance Scale (Ladd & Price, 1987). The original subscales include school liking (nine items, e.g. 'Do you like being in school?') and school avoidance (five items, e.g. 'Do you ask your parent(s) to let you stay home from school?'), rated on a three-point response scale. In the present Italian sample, the original factor structure was not confirmed adequately. After several adjustments, an interpretable three-factor structure emerged with adequate fit:  $\chi^2_{(95)} = 804.12$ , CFI = 0.96, RMSEA = 0.042, with factors representing school liking (nine items,  $\alpha = 0.79$ ), school dislike (three items,  $\alpha = 0.78$ ) and school avoidance (two items,  $\alpha = 0.71$ ).

Children also provided self-reports of loneliness with the 19-item Loneliness and Social Dissatisfaction Questionnaire for Young Children (Cassidy & Asher, 1992). Results from CFA revealed adequate fit for the one-factor structure:  $\chi^2(77) = 194.6$ , CFI = 0.954, RMSEA = 0.031. After eliminating items that compromised the internal consistency of the scale but that did not contribute substantially to adequate fit, we computed a 14-item score of loneliness ( $\alpha = 0.70$ , e.g. 'Are you sad and alone at school?').

#### **Parent and teacher ratings**

We used an adaptation of the Child Behavior Checklist (Achenbach & Edelbrock, 1981), as originally modified for use in the Ontario Child Health Study (Offord, Boyle, Fleming, Blum, & Grant, 1989) and the Montreal Longitudinal Survey (Tremblay, Pihl, Vitaro, & Dobkin, 1994). Items were added to encompass prosocial behaviors and relational, as well, as direct-physical aggression. This adapted measure has

demonstrated excellent psychometric properties (Statistics Canada/Human Resources Development Canada, 1999) and strong evidence of construct validity in subsequent studies (e.g. Kohen, Leventhal, Dahinten, & McIntosh, 2008).

The research assistants administered the questionnaire to both fathers and mothers wherever possible. We used the data from the mothers in our analyses because they were available and complete for all cases except one (however, the results obtained using the father ratings were very similar). Identical items were administered to the children's teachers.

CFA revealed adequate fit to the five-factor structure used in several Canadian studies:  $\chi^2(62) = 771.12$ , CFI = 0.955, RMSEA = 0.025. Subscales included physical aggression (five items, e.g. 'Gets into many fights'), relational aggression (five items, e.g. 'spreads rumors about other children'), anxiety (four items, e.g. 'Seems to be unhappy, sad, or depressed'), inattention (four items, e.g. 'is easily distracted and has difficulty completing any task'), and prosocial behavior (four items, e.g. 'will try to help someone who is hurt'). Internal consistency coefficients ranged from  $\alpha = 0.75$  to  $\alpha = 0.88$ , averaging 0.82 for mothers' ratings and 0.79 for teachers' ratings.

Finally, we also asked the teachers to rate each participant's achievement in language and in mathematics using a five-point scale. This method has been used to assess academic achievement accurately and efficiently in many North American studies (Hoge & Coladarci, 1989).

### **Receptive vocabulary**

The Peabody Test di Vocabulario Recettivo (Stella, Pizzoli, & Tressoli, 2000) is a standardized, commercially distributed Italian version of the widely used Peabody Picture Vocabulary Test. We used the Peabody in order to describe our sample and to establish the equivalence of our groups in terms of linguistic competence.

### **Log of transition practices**

Contact persons in each school kept a log of transition practices. We coded these into low, medium and high implementation. High implementation ( $N = 8$  schools) meant activities on at least ten days, including contact by both children and parents with the new school building, the new school's personnel, and the new school's pupils. Medium implementation ( $N = 12$  schools) consisted of activities on at least five days, including some contact by either parents or children with the new school building, personnel, or pupils. Typically, medium participation entailed some contact between teachers and children of the sending and receiving schools plus information sessions for parents. Finally, low participation ( $N = 4$  schools) meant activities taking place on fewer than five days, not involving contact by the children with the new school building, teachers, or pupils. Typically, this involved meetings with parents.

## Results

### Differences among schools at the outset of the study

A series of ANOVAs and chi-square analyses revealed no significant differences in the control variables (i.e. Peabody and parent education) among the schools that would later be classified as low, medium and high in their implementation of transition practices.

### Data reduction

We conducted exploratory factor analyses to reduce the number of dependent variables. A five-factor solution reflected the most theoretically relevant representation of the data: academic achievement, pupil-rated school liking, teacher-rated school liking, problem behavior, cooperativeness, and academic achievement (explaining 65.08% of the variability in the 14 initial variables). We next used confirmatory factor analyses (in M-Plus v6.0; Muthen & Muthen, 2006) to test the degree to which the five-factor model fit the data. At each time-point, a model was constructed wherein the five factors were loaded onto their latent indicators. The resulting models fit to the data reasonably well, with fit statistics at each time-point within acceptable ranges (Time 1:  $\chi^2(64) = 154.67, p < 0.05, CFI = 0.91, RMSEA = 0.06, SRMR = 0.06$ , Time 2:  $\chi^2(64) = 228.67, p < 0.05, CFI = 0.90, RMSEA = 0.08, SRMR = 0.06$ , Time 3:  $\chi^2(64) = 138.47, p < 0.05, CFI = 0.96, RMSEA = 0.05, SRMR = 0.05$  and Time 4:  $\chi^2(64) = 147.80, p < 0.05, CFI = 0.96, RMSEA = 0.05, SRMR = 0.05$ ).

### Analytic strategy

The analyses were conducted using a three-level multi-level modeling framework in HLM (Raudenbush, Bryk, Cheong, & Congdon, 2000) with each time-point (Level 1) nested within each child (Level 2) and each child nested within each school (Level 3). Model building began first with an unconditional model without any predictors to demonstrate the proportion of variance within the individual (Level 1), between individuals (Level 2) and between schools (Level 3). One of the advantages of multi-level modeling is that effects at lower levels (significant or not) can vary significantly at higher levels (as measured using a chi-squared test) and that variability can be accounted for. The dependent variables were academic achievement, pupil-rated school liking, teacher-rated school liking, problem behavior, and cooperativeness.

At Level 1 (intra-individual change), hypothesis testing began after first including Peabody scores as a covariate. Following that, the differences during the first year of the study (Time 1 versus Time 2, coded as -1 and +1 respectively) were examined. Moreover, the differences before and after the transition were also explored (Times 1 and 2 versus Times 3 and 4, coded as -1 and +1 respectively). Finally, differences during the last year of the study were examined (Time 3 versus Time 4, coded as -1 and +1 respectively) to test whether the effects of the transition strengthened or weakened during this period ('consolidation'). The three variables to test for change over time (first year, transition, and consolidation) were entered into the analyses simultaneously so as to model overall change over the course of the entire project. Due to a lack of degrees of freedom, only the effects of the transition and consolidation were allowed to vary at Level 2 and Level 3 (and the intercept). In other words, the change over the course of the first year was set as fixed.

At Level 2 (between child difference), the covariates of mother and father education were included in the model as centered variables first (fixed at Level 3) and then sex differences were tested after (also



centered though allowed to vary at Level 3). As a Level 3 variable, the principal predictor for this project was the effect of the implementation technique. The effect of implementation was examined by scoring for differences between the low implementation schools and the other types first (dummy coded as -2 and +1). Differences between the mid-implementation and high implementation schools (dummy coded as -1 and +1) were then tested last. Only effects with a statistically significant reduction in variance are detailed below.

### **Academic achievement**

The unconditional model intra-class correlation (ICC) revealed that 42.32% of the variability in academic achievement was at level of intra-individual differences, 56.07% of the variability was at the between-subject level and the 1.61% was at the school level. This distribution is quite common in multi-level modeling (Romano, Tremblay, Boulerice & Swisher, 2005). The Peabody covariate was significantly positively associated with academic achievement. We next examined change over time. There was no significant change over the course of this first year. However, academic achievement did decrease significantly following the transition to the new school and increased again during the second year (consolidation). Overall, the variables of change over time explained 41.19% of the remaining Level 1 variability in academic achievement ( $\Delta\chi^2(13) = 225.04, p < 0.05$ ).

At the between-subject level, there was significant variability in academic achievement ( $\chi^2_{(265)} = 1533.19, p < 0.05$ ) in the change following the transition ( $\chi^2_{(265)} = 622.90, p < 0.05$ ), and in the consolidation of those changes ( $\chi^2_{(265)} = 318.61, p < 0.05$ ). Mothers' education was positively associated with academic achievement overall (explaining 0.45% of the between-subject variability,  $\Delta\chi^2_{(2)} = 6.52, p < 0.05$ ). Moreover, higher mother's education was tied to a significantly lower drop in academic achievement during the transition (explaining 5.26% of the between-subject variability,  $\Delta\chi^2_{(2)} = 15.39, p < 0.05$ ). Sex differences were also observed. Girls had significantly higher academic achievement scores overall (explaining 4.19% of the remaining between-subject variability,  $\Delta\chi^2_{(1)} = 117.89, p < 0.05$ ) and decreased half as much during the transition as boys did (explaining 6.91% of the remaining between-subject variability,  $\Delta\chi^2_{(1)} = 42.92, \Delta\chi^2$  ).

At the between-school level, there was significant variability in academic achievement overall ( $\chi^2_{(20)} = 30.95, p < 0.05$ ) in the change following the transition ( $\chi^2_{(20)} = 98.75, p < 0.05$ ) and in the consolidation of those changes ( $\chi^2_{(20)} = 43.32, p < 0.05$ ). The first comparison pertained to differences between the low-implementation schools and the others. A significant difference was observed for academic achievement overall in that the low-implementation schools scored lower in academic achievement overall (explaining 0.77% of the between school variability,  $\Delta\chi^2_{(1)} = 7.40, p < 0.05$ ). No other significant between-school differences were observed.

### **Pupil-rated school liking**

The unconditional model ICC revealed that 70.97% of the variability in pupil-rated school liking was at level of intra-individual differences, 27.23% of the variability was at the between-subject level and the 1.80% was at the school level. No significant effect of Peabody scores was observed. There were a number of changes over the course of the project. First, there was a significant decrease over the course of the first and second school years and pupil-rated school liking was significantly higher after the transition. Overall, the variables of change over time explained 33.55% of the Level 1 variability in pupil-rated school liking ( $\Delta\chi^2_{(13)} = 166.82, p < 0.05$ ).

At the between-subject level, there was significant variability in pupil-rated school liking ( $\chi^2_{(265)} = 994.98$ ,  $p < 0.05$ ) in the change following the transition ( $\chi^2_{(265)} = 411.29$ ,  $p < 0.05$ ) and in the consolidation of those changes ( $\chi^2_{(265)} = 431.62$ ,  $p < 0.05$ ). No significant effects of mother and father education were observed. In addition, one sex difference was observed: Girls reported significantly higher liking overall than boys (explaining 5.95% of the remaining between-subject variability,  $\Delta\chi^2_{(1)} = 70.88$ ,  $p < 0.05$ ).

At the between-school level, there was significant variability in pupil-rated school liking overall ( $\chi^2_{(19)} = 34.39$ ,  $p < 0.05$ ) in the change following the transition ( $\chi^2_{(19)} = 38.77$ ,  $p < 0.05$ ) and in the consolidation of those changes ( $\chi^2_{(19)} = 27.74$ ,  $p < 0.05$ ). Girls reported significantly higher liking than boys in low-implementation school but not in the others (explaining 30.78% of the between school variability,  $\Delta\chi^2_{(1)} = 7.51$ ,  $p < 0.05$ ). In addition, there was also a significant difference between medium and high implementation schools in the drop in school liking during the second year (explaining 20.79% of the remaining variance,  $\Delta\chi^2_{(1)} = 8.51$ ,  $p < 0.05$ ). Specifically, pupil-rated school liking increased during the second year in high implementation schools while decreasing in mid-implementation schools.

### **Teacher-rated school liking**

The unconditional model ICC revealed that 73.39% of the variability in teacher-rated school liking was at level of intra-individual differences, 20.98% of the variability was at the between-subject level and the 5.64% was at the school level. The Peabody covariate was significantly and negatively associated with liking. In addition, there was a significant decrease over the course of the first year and over the course of the second. Overall, these variables explained 24.63% of the Level 1 variability in teacher-rated school liking ( $\Delta\chi^2_{(13)} = 122.09$ ,  $p < 0.05$ ).

At the between-subject level, there was significant variability in teacher-rated school liking overall ( $\chi^2_{(210)} = 511.18$ ,  $p < 0.05$ ), in the change following the transition ( $\chi^2_{(210)} = 380.44$ ,  $p < 0.05$ ) and in the consolidation of those changes ( $\chi^2_{(210)} = 148.84$ ,  $p < 0.05$ ). No significant effects of mother and father education were observed. In addition, no sex differences were observed.

At the between-school level, there was significant variability in teacher-rated school liking overall ( $\chi^2_{(18)} = 79.08$ ,  $p < 0.05$ ), in the change following the transition ( $\chi^2_{(18)} = 68.25$ ,  $p < 0.05$ ) and in the consolidation of those changes ( $\chi^2_{(18)} = 37.12$ ,  $p < 0.05$ ). A significant difference was observed as a function of implementation on teacher-rated school liking (explaining 27.40% of the between school variability,  $\Delta\chi^2_{(1)} = 6.88$ ,  $p < 0.05$ ). In low- implementation schools, liking decreased over the school transition. No other significant between-school differences were observed.

### **Cooperativeness**

The unconditional model ICC revealed that 55.68% of the variability in cooperativeness was at level of intra-individual differences, 39.60% of the variability was at the between-subject level and the 4.73% was at the school level. The Peabody covariate was significantly and positively associated with cooperativeness. In addition, there was a significant increase over the course of the first year and over the course of the second. Overall, these variables explained 30.07% of the Level 1 variability in cooperativeness ( $\Delta\chi^2_{(13)} = 159.92$ ,  $p < 0.05$ ).

At the between-subject level, there was significant variability in cooperativeness ( $\chi^2_{(213)} = 934.90$ ,  $p < 0.05$ ), in the change following the transition ( $\chi^2_{(213)} = 413.50$ ,  $p < 0.05$ ) and in the consolidation of those changes ( $\chi^2_{(213)} = 321.82$ ,  $p < 0.05$ ). Higher mothers' education was tied to a significant drop in

cooperativeness during the transition (explaining 63.97% of the between-subject variability,  $\Delta\chi^2_{(2)} = 7.97, p < 0.05$ ). One sex difference was observed: Girls reported significantly higher cooperativeness overall than did boys (explaining 5.33% of the remaining between-subject variability,  $\Delta\chi^2_{(1)} = 97.71, p < 0.05$ ).

At the between-school level, there was significant variability in cooperativeness overall ( $\chi^2_{(17)} = 43.61, p < 0.05$ ) in the change following the transition ( $\chi^2_{(17)} = 83.66, p < 0.05$ ) and in the consolidation of those changes ( $\chi^2_{(17)} = 30.48, p < 0.05$ ). No other significant one- or two-way between-school differences were observed.

### **Problem behavior**

The unconditional model ICC revealed that 48.77% of the variability in problem behavior was at level of intra-individual differences, 43.53% of the variability was at the between-subject level and the 7.69% was at the school level. No significant effect of Peabody scores was observed. There was a significant decrease in problem behavior over the course of the first year and over the transition. Overall, these variables explained 39.39% of the Level 1 variability in problem behavior ( $\Delta\chi^2_{(13)} = 232.21, p < 0.05$ ).

At the between-subject level, there was significant variability in problem behavior ( $\chi^2_{(213)} = 934.90, p < 0.05$ ) in the change following the transition ( $\chi^2_{(213)} = 413.50, p < 0.05$ ) but not in the consolidation of those changes ( $\chi^2_{(213)} = 178.33, p > 0.05$ ). Mothers' education was negatively associated with problem behavior overall (explaining 2.11% of the between-subject variability,  $\Delta\chi^2_{(2)} = 27.02, p < 0.05$ ). In addition, girls scored lower on problem behavior overall than boys (explaining 8.84% of the remaining between-subject variability,  $\Delta\chi^2_{(1)} = 89.04, p < 0.05$ ).

At the between-school level, there was significant variability in problem behavior overall ( $\chi^2_{(18)} = 73.64, p < 0.05$ ), in the change following the transition ( $\chi^2_{(18)} = 83.49, p < 0.05$ ) and in the consolidation of those changes ( $\chi^2_{(18)} = 75.84, p < 0.05$ ). A two-way interaction revealed a significant difference as a function of implementation on the school transition. In low-implementation schools, there was an increase in problem behavior following the transition to a new school and a decrease in the other schools (explaining 30.51% of the between school variability,  $\Delta\chi^2_{(1)} = 19.22, p < 0.05$ ). In addition, the high-implementation schools decreased significantly more than the mid-implementation schools during this transition explaining 39.32% of the remaining between school variability ( $\Delta\chi^2_{(1)} = 22.60, p < 0.05$ ).

### **Discussion**

Overall, our results indicated that the degree of implemented transition practices was associated with better adjustment after the transition from preschool to elementary school. These findings were generally consistent across all outcome variables (academic achievement, child- and teacher-rated school liking, teacher-rated cooperativeness, and teacher-rated problem behaviors).

### **Variability among schools in transition practices**

We found many differences among schools at pre-transitions in their implementation of the Reggio-Emilia transition procedures. This came as somewhat of a surprise, given that schools were informed

completely about the purposes of the study and were free to decide to participate or not to. A salient feature of the Italian school law mandating transition practices is that schools are allowed considerable latitude in deciding on the transition practices they implement. Perhaps schools whose pupils already demonstrate greater potential to learn and more positive attitudes were more likely than others to invest in a successful transition. On the other hand, the better pre-transition adjustment of the pupils in higher-implementation schools might be reflective of better implementation of the philosophy as a whole, including greater sensitivity to the needs of each child and more cognitive stimulation. In this regard, transition practice is likely not an isolated phenomenon but is probably related to more general features of school climate.

In contemplating the implications of our results for educational practice outside of Italy, it is useful to reflect on the basic differences between the low-implementation schools and the others. Despite the prevailing philosophy stipulating that successful transitions are based on forming relationships in the post-transition school community, the low-implementation schools probably did not provide sufficient contact for more than superficial acquaintanceship to emerge, at best. In contrast, the more extensive contact provided by the schools that implemented the transition provisions more ardently probably left the transitioning students with at least the beginnings of relationships that they could continue once they arrived in their new schools. The incoming pupils will have shared some learning or recreational activity with children and adults who could become senior learning partners the year after, as is the desired outcome in the Reggio-Emilia approach to school transition.

### **Limitations of our study**

To begin with, our data are not experimental. Therefore, we can only establish that the transition-facilitation practices are associated with successful transition, not that no extraneous between-school factor is not at work at the schools where the transition was successful or that no other type of transition-facilitating practice would not be better. We also note that many of our findings were achieved despite considerable positive skewness in the data.

### **Implications for school psychologists**

Although the scuole d'infanzia of the Reggio-Emilia region are admired by educators throughout the world, schools in many other countries would find the approach difficult to replicate in its entirety because of limited resources and/or less consistent identification with a pedagogical ideology that guides both teaching and the facilitation of school transitions. Therefore, it is logical to ask whether any of the Reggio-Emilia approach to school transition can be useful elsewhere if the entire philosophy is not adopted. Although purists steeped in the Reggio tradition would argue otherwise, there is every reason to believe that borrowing some of the transition-facilitation practices in isolation will pay off. It has been found that any familiarity with the receiving school is linked with better post-transition adjustment (Itskowitz, Strauss, & Fruchter, 1987). Furthermore, parent involvement at the time of school entry has been found to relate to subsequent academic achievement in the US, where preschool education is not guided by a philosophy of education to the same extent as in Northern Italy (Graves & Wright, 2011).

School psychologists may be in a privileged position to facilitate practices that facilitate school transition. Because many school psychologists work with pupils of different ages, they may be more familiar with the differences between the sending and receiving schools than many of the personnel who work at only one level. Furthermore, school psychologists often work with the parents of pupils

who are at risk of unsuccessful school transition. Parent involvement has been seen as an integral element of primary prevention efforts to reduce school maladjustment (Grimley & Bennett, 2000). However, some targeted or secondary-prevention interventions may be implemented, for example, by school psychologists working with at-risk children. It would be more consistent with the Reggio philosophy for the entire cohort of pre-transition students to visit their new schools. However, it may be useful for school psychologists to arrange visits to new schools on an individual basis for the parents of at-risk children and the children themselves if system-wide transition facilitation does not provide for this.

We hope that school psychologists are inspired by our findings to redouble their efforts at putting into place systematic, systemic and effective procedures for facilitating school transitions. Some of our findings, however, are a bit perplexing in that regard. Although Italian law requires that each school develop some measures for the facilitation of school transition, schools are completely free to decide what their school-transition program will be. This mirrors the debate in the prevention literature between fidelity—implementing tightly prescribed procedures ‘by the book’—and adaptation—allowing flexible implementation at the school and teacher levels (Dane & Schneider, 1998). We found that, despite the allowance for a great deal of flexibility, there still were wide fluctuations in the implementation of transition practices. Much more needs to be learned about what motivates schools and teachers to implement potentially effective interventions wholeheartedly.

## References

- Achenbach, T., & Edelbrock, C. (1981). Behavioral problems and competencies reported by parents of normal and disturbed children aged four through sixteen. *Monographs of the Society for Research in Child Development, 46*, 1–82. doi: 10.2307/1165983.
- Cassidy, J., & Asher, S. (1992). Loneliness and peer relations in young children. *Child Development, 63*, 350–365. doi: 10.2307/1131484.
- Cecconi, L. (Ed.) (2012). *Le rappresentazioni degli insegnanti: Un'indagine sulla continuita nelle scuole di Reggio Emilia*. Milan: Franco Angeli.
- Corsaro, W., Molinari, L., & Rosier, K. B. (2002). Zena and Carlotta: Transition narratives and early education in the United States and Italy. *Human Development, 45*, 323–348. doi:10.1159/000064646.
- Dane, A. V., & Schneider, B. H. (1998). Program integrity in primary and early secondary prevention: Are implementation effects out of control? *Clinical Psychology Review, 18*, 23–45. doi: [http://dx.doi.org/10.1016/S0272-7358\(97\)00043-3](http://dx.doi.org/10.1016/S0272-7358(97)00043-3).
- Edwards, C., Gandini, L., & Forman, G. (2012). *The hundred languages of children: The Reggio Emilia experience in transformation* (3rd ed.). Santa Barbara, CA: Praeger.
- Entwisle, D. R., & Alexander, K. L. (1998). Facilitating the transition to first grade: The nature of transition and research of factors affecting it. *Elementary School Journal, 98*, 381–397.
- Grimley, L. K., & Bennett, J. (2000). Beginning school ready to learn: An international perspective. *School Psychology International, 21*, 322–335.
- Graves, S. L. Jr., & Wright, L. B. (2011). Parent involvement at school entry: A national examination of group differences and achievement. *School Psychology International, 32*, 35–48.
- Hoge, R., & Coladarci, T. (1989). Teacher-based judgments of academic achievement: A review of the literature. *Review of Educational Research, 59*, 297–313. doi: 10.2307/1170184.
- Itskowitz, R., Strauss, H., & Fruchter, D. (1987). Does familiarity with school increase adjustment? A study of expectations and perceptions of Israeli kindergarten and first-grade pupils and their adaptation to school in two different educational settings. *School Psychology International, 8*, 251–255.
- Kohen, D. E., Leventhal, T., Dahinten, V. S., & McIntosh, C. N. (2008). Neighborhood disadvantage: Pathways of effects for young children. *Child Development, 79*, 156–169. doi: 10.1111/j.1467-8624.2007.01117.x.
- Koutrouba, K., Antonopoulou, E., Tsitsas, G., & Zenakou, E. (2009). An investigation of Greek teachers' views on parental involvement in education. *School Psychology International, 30*, 311–328.
- Ladd, G., & Price, J. (1987). Predicting children's social and school adjustment following the transition from preschool to kindergarten. *Child Development, 58*, 1168–1189. doi:10.2307/1130613.

- Laverick, D. (2008). Starting school: Welcoming young children and families into early school experiences. *Journal of Early Childhood Education, 35*, 321–326. doi: 10.1007/s10643-007-0201-8.
- LoCasale-Crouch, J., Mashburn, A., Downer, J., & Pianta, C. (2008). Pre-kindergarten teachers' use of transition practices and children's adjustment to kindergarten. *Early Childhood Research Quarterly, 23*, 124–139. doi: 10.1016/j.ecresq.2007.06.001.
- Muthe'n, L. K., & Muthe'n, B. O. (2006). *Mplus user's guide* (4th ed.). Los Angeles, CA: Author.
- Offord, D., Boyle, M., Fleming, J., Blum, H., & Grant, R. (1989). Summary of selected results. *The Canadian Journal of Psychiatry, 34*, 483–491.
- Pianta, R., Cox, M., & Early, D. (2001). Transition practices findings from a national survey of kindergarten teachers. *Early Childhood Education Journal, 28*, 199–206. doi: 10.1023/A:1026503520593.
- Raudenbush, S. W., Bryk, A. S., Cheong, Y., & Congdon, R. T. (2000). *HLM 5: Hierarchical linear and nonlinear modeling*. Chicago, IL: Scientific Software International.
- Romano, E., Tremblay, R. E., Boulerice, B., & Swisher, R. (2005). Multilevel correlates of childhood physical aggression and prosocial behavior. *Journal of Child Psychology, 33*, 565–578. doi: 10.1007/s10802-005-6738-3.
- Schulting, A., Malone, P., & Dodge, K. (2005). The effect of school based transition policies and practices on child academic outcomes. *Developmental Psychology, 6*, 860–871. doi: 10.1037/0012-1649.41.6.860.
- Sink, C., Edwards, C., & Weir, S. (2007). Helping children transition from kindergarten to first grade. *Professional School Counselling, 10*, 223–237.
- Statistics Canada/Human Resources Development Canada. (1999). *National longitudinal survey of children and youth cycle 3 survey instruments 1998–99: Book 1-Parent and child*. Ottawa: Special Surveys Statistics Canada.
- Stella, G., Pizzoli, C., & Tressoli, P. (2000). *Peabody test di vocabulario recettivo*. Turin: Omega.
- Tremblay, R., Pihl, R., Vitaro, F., & Dobkin, P. (1994). Predicting early onset of male antisocial behaviour from preschool behaviour. *Archives of General Psychiatry, 51*, 732–739. doi: 10.1001/archpsyc.1994.03950090064009.