



Transition to formal schooling: Do transition practices matter for academic performance?[☆]

Annarilla Ahtola^{a,*}, Gintautas Silinskas^b, Pirjo-Liisa Poikonen^c,
Marita Kontoniemi^d, Pekka Niemi^a, Jari-Erik Nurmi^b

^a Department of Psychology, University of Turku, 20014 University of Turku, Finland

^b Department of Psychology, University of Jyväskylä, P.O. Box 35, 40014 University of Jyväskylä, Finland

^c Department of Education, University of Jyväskylä, P.O. Box 35, 40014 University of Jyväskylä, Finland

^d Teacher Training School, University of Jyväskylä, P.O. Box 35, 40014 University of Jyväskylä, Finland

ARTICLE INFO

Article history:

Received 10 February 2010

Received in revised form 2 December 2010

Accepted 21 December 2010

Keywords:

Preschool

Kindergarten

Elementary school transition

Transition practices

First grade achievement

ABSTRACT

This study examined whether the transition practices implemented in preschool–elementary school pairs contribute to children’s academic development during the first year of elementary school. Participants were 398 children who moved from 36 preschools to 22 elementary schools in two Finnish towns. Children were tested in respect to their reading, writing, and math skills in the preschool spring and in the grade 1 spring. The most common practices reported by preschool teachers were discussions about the school entrants and familiarizing preschool children with the school environment and the new teacher. Multilevel latent growth modeling showed that the more the preschool teachers and elementary-school teachers implemented various supportive activities during the preschool year, the faster the children’s skills developed from preschool to grade 1 spring. Co-operation over curricula and passing on written information about children between the preschool and the elementary school were the best predictors of the children’s skills, although they were the least commonly used practices. The need to restructure the transition to elementary school and the use of multiprofessional resources are discussed.

© 2010 Elsevier Inc. All rights reserved.

Starting formal education is one of the major transitions in a child’s and his or her family’s life. Throughout educational systems around the world, school entry is a significant step, causing both stress and stimulation (Niesel & Griebel, 2007). Effective school-level policies to smooth the discontinuity of transition to elementary school are the focus of this study. The school transition has been a subject of major interest for quite some time (see, e.g., Ramey & Ramey, 1998; Rimm-Kaufman & Pianta, 2000; Vernon-Feagans & Blair, 2006). Traditionally, the main attention of multiprofessional personnel in preschool and school (e.g., teachers, special teachers, school nurses, and school psychologists) has focused on the level of individual school entrants, that is, children starting formal education, and their readiness for school. However, recently the construct and assessment of school readiness as a qual-

ity of individual children, as well as the consequences of these assessments have been criticized in several ways (see, e.g., Carlton & Winsler, 1999; Graue, 1999; Kim & Suen, 2003; La Paro & Pianta, 2000; Meisels, 1999, 2007; Snow, 2006). The modern view on school transition emphasizes the relational nature of the concept of school readiness—the child’s readiness for school, and the school’s readiness for children (Graue, 2006; Lewit & Baker, 1995; Meisels, 1996; National Education Goals Panel, 1998; Petriwskyj, Thorpe, & Tayler, 2005; Ramey & Ramey, 1994; Sameroff & McDonough, 1994).

However, to fully understand the school transition, we must acknowledge the whole network surrounding the child and the school. Applying the bioecological model of Bronfenbrenner and Morris (1998), Rimm-Kaufman and Pianta (2000) introduced an ecological and dynamic model of transition. According to this model, “. . . transition to school takes place in an environment defined by the many changing interactions among child, school, classroom, family, and community factors.” (p. 499). The main focus of the ecological model of transition is to place the individual child into a net of relationships, thus easing the discontinuity between the different cultures of pre-school environments and school. A variety of activities, which build and strengthen relationships between significant contexts, such as the family, the preschool, and the elementary school, are suggested as the primary

[☆] This study has been carried out in the Centre of Excellence in Learning and Motivation Research financed by the Academy of Finland (Grant 129652). The authors are grateful for the help of the families and teachers participating in this study. We also want to thank editors and three anonymous reviewers, as well as Tiina Turunen, Elisa Poskiparta, and Asko Tolvanen for their elucidating comments on the earlier drafts of this paper.

* Corresponding author. Tel.: +358 2 333 8641; fax: +358 2 333 5060; mobile: +358 50 466 7118.

E-mail address: annarilla.ahtola@utu.fi (A. Ahtola).

means to smooth the school transition by the multiprofessional personnel in preschool and school. Successful relationships are characterized by frequent contact, agreed-on goals, and a focus on supporting the child (Rimm-Kaufman & Pianta, 2000). The eventual positive connections between these supporting practices and children's later school achievement are analyzed here.

In this study, transition practices are defined as reciprocal organization activity and co-operation (vertical connection), one of the aims of which is to connect with the families (horizontal connection). In fact, in the Finnish language, the phrase "transition practices" is expressed more as "co-operation of the transition period," which highlights the reciprocal nature of the transition phenomenon from preschool to elementary school. Forming vertical connections that are characterized by mutual trust and respect, as well as shared responsibility between preschool and elementary school professionals, is essential (Dockett & Perry, 2001; Einarsdottir, Perry, & Dockett, 2008; Pianta, Kraft-Sayre, Rimm-Kaufman, Gercke, & Higgins, 2001). These positive contacts between preschool and elementary school personnel form an adequate foundation for further mutual activities which, in turn, create and strengthen positive relationships. In this study, we looked into four different types of transition practices. First, we were interested in various mutual activities between preschool and elementary school (e.g., joint events, teaching), and other activities that aim to familiarize preschoolers with the elementary school environment, and thus reduce the abruptness of the change. Second, we looked into the ways of passing on useful information about school entrants, for example, their special needs, or group dynamics (Broström, 2003; Thorsen, Bø, Løge, & Omdal, 2006). Third, we asked whether the curricula of preschool and elementary school were written and revised jointly by the preschool and elementary school personnel. We assume that this activity will bridge and reduce the discontinuities in concepts, expectations, curriculum, pedagogy, and discipline between preschool and elementary school (Carlton & Winsler, 1999; Einarsdottir, 2006; Einarsdottir et al., 2008; Kagan & Neuman, 1998; Rimm-Kaufman & Pianta, 2000).

In addition to connecting with each other, it is crucial that the preschool and elementary-school teachers make horizontal connections with families (see, e.g., Mangione & Speth, 1998; Margetts, 2007). Elementary-school teachers, who usually become important persons in the child's life, should establish personal-level trust and rapport with the families even before the school starts (La Paro, Pianta, & Cox, 2000a, 2000b; Nelson, 2004; Pianta, Cox, Taylor, & Early, 1999). Opportunities to interact and discuss are also essential because children, parents, and teachers emphasize different issues when considering school entrance (Dockett & Perry, 2004a, 2004b; Piotrkowski, Botsko, & Matthews, 2001). The fourth type of transition practice in this study was, accordingly, the families' opportunities to meet with preschool and elementary-school personnel before school starts, either in group meetings or individually.

1. The effects of transition practices

Although some transition practices are widely used, and there seems to be a practical and theoretical consensus on the importance of these activities (see, e.g., Clark & Zygmunt-Fillwalk, 2008; Einarsdottir et al., 2008; Pianta et al., 1999), only few efforts have been made to investigate their impacts on child outcomes. For example, does the implementation of transition practices affect children's actual school success, and if so, which practices are effective? To our knowledge, only two studies have examined these questions so far.

Schulting, Malone, and Dodge (2005) found a positive connection between implementation of transition practices at

preschool–kindergarten transition and academic achievement at the end of kindergarten. As these authors were especially interested in the mediator effect of parent-initiated involvement in school, four of the six transition practices in their study concentrated on strengthening the horizontal home–school connection. The only practice showing independent impact was, in fact, parents and children visiting the kindergarten classroom prior to the beginning of the school year. Vertical co-operative activities between preschool and elementary-school personnel were not explicitly included in this study. LoCasale-Crouch, Mashburn, Downer, and Pianta (2008), however, conceptualized transition practices more broadly; the nine practices included in their study covered both horizontal and vertical contacts, in a rather similar fashion to the practices measured in the present study. They found a positive association between preschool transition practices and children's socio-emotional adjustment in the kindergarten fall. Further, the contact between preschool and kindergarten teachers turned out to be the strongest predictor of children's social and behavioral adjustment.

However, these previous studies only partially cover the topic of transition practice effects. Our study will add to previous knowledge in three ways. First, we make use of longitudinal data on children's school achievement during the transition period from preschool to elementary school, as opposed to LoCasale-Crouch et al. (2008) and Schulting, Malone, & Dodge (2005), who used cross-sectional designs. Second, we use data from Finland, where the society promotes egalitarian values, with the public school system offering everyone the same basic nine-year education with free lunch. The Finnish school system has become internationally famous during the 2000's due to success in the OECD's PISA surveys. Finnish 15-year-olds are among the best in reading literacy, mathematical literacy, problem solving, and scientific literacy (OECD, 2001, 2004, 2007). The between-school variance is small, reflecting the lack of strict stratification in the Finnish society: on an international scale, the wealth distribution in Finland tends to be equal and social classes are less distinctive. Third, our data consist of certain regional preschool–elementary school pairs. Children, who come from preschool to elementary school within these pairs, have familiar peers entering the same class or at least the same school with them, which per se is considered to ease the stress of the school transition (Ladd & Price, 1987). An interesting question, thus, is whether or not transition practices can have surplus value, even when the school system performs well and the physical school transition is intrinsically quite predictable.

2. The Finnish educational system

Unlike in the United States and many European countries, formal schooling in Finland (as in Sweden and Denmark) begins rather late. The compulsory education, grades 1–9, starts from the year in which the child turns 7 years of age and ends when he or she is 16 years of age. Before entrance to elementary school, all 6-year-olds are entitled to free-of-charge preschool, which is attended by practically all children (Kumpulainen, 2008). At the end of preschool, 20–30% of children are fluent readers, and only 30% show no sign of reading (Holopainen, Ahonen, Tolvanen, & Lyytinen, 2000; Silvén, Poskiparta, & Niemi, 2004). In this paper, we use the term *preschool* in reference to this pre-school activity for 6 years olds, and the term *grade 1* in reference to the first year of elementary school for 7 years olds.

The preschool and basic education are organized, and, with government support, funded by local municipal authorities, who also have considerable potential to guide the education policies and contents on the basis of national legislation and the national core curricula. Finnish preschool is usually organized in connec-

tion with daycare centers; only 20% of children attend preschool that is located in an elementary school (Kumpulainen, 2008). Daycare, as a part of the early education services, is nationally organized within social services at the moment. However, about 50% of municipalities have transferred early education to the school department (Petäjaniemi & Pokki, 2010). More than 60% of children aged 3–5 years attend daycare (Färkkilä et al., 2005), which in Finland combines education and care (Hännikäinen, 2003). Municipal preschools and schools are, as a rule, organized in regional preschool(s)–elementary school pairs or units, thereby children from given preschools usually go to the nearby elementary school. Private schools are quite rare in Finland, but private daycare and preschools are more widely available.

Finnish preschool and elementary school are different in their educational origins and traditions. Guidelines for preschool education emphasize learning by play, integrated activities, and child-centered teaching, while guidelines for elementary school mainly emphasize instruction in different subjects (see Hännikäinen, 2003). Accordingly, the development of partnership and continuity in curriculum and pedagogy has been highlighted, as is also the case in many other countries. The Finnish Core Curriculum for Preschool Education (2000), regulated by the Ministry of Education, strives at continuity from early childhood education to preschool and from preschool education to basic education, especially to the first two years of elementary school. National guidelines recommend that in formulating the local preschool curriculum, attention should be given to the elementary school curriculum, and both curricula should be developed in co-operation with parents and children (see also National Core Curriculum for Basic Education, 2004). No precise descriptions of, or instructions for, the implementation of other transition practices are given, while the co-operation between home and preschool/elementary school is discussed in curricula in somewhat broad terms. That notwithstanding, rather stabilized transition practices take place within regional preschools–school units. Sometimes the co-operation in the transition phase is understood in a narrow sense meaning not much more than passing on information on school entrants, but there are also more comprehensive and versatile transition programs. Additionally, the elementary schools organize school registration at the beginning of the year, as well as the school visiting day in the preceding May, when both children and parents are welcome to familiarize themselves with the school.

3. Aims and hypotheses

In the present study, two questions were addressed. First, how do Finnish preschool–elementary school pairs differ in terms of the implementation of various transition practices? We hypothesized that variation among pairs exists in terms of the number of different practices implemented, and that various practices are not implemented to the same extent. Second, does the number of different transition practices predict the development of children's academic skills during grade 1? We hypothesized that there will be a positive association between the overall number of transition practices and academic skills, but not at the level of implementation of single practices.

4. Method

4.1. Participants

Data for the present study were drawn from the ongoing longitudinal First Steps Study: Interactive Learning in the Child–Parent–Teacher Triangle (Poikkeus et al., 2006). First Steps is a prospective follow-up of approximately 2000 children from

four towns from the beginning of their preschool year to the end of the fourth school year (2006–2011). Data from two towns, where the preschools were organized within social services and were, as a rule, located elsewhere than in the elementary school building, were included in this study. In Town 1 from Eastern Finland, participation of the whole age-cohort entering preschool (about 900 children) was targeted. All elementary schools and preschools participated, except for one preschool–elementary school pair. In Town 2 from Southern Finland, the participation of about a half of the age cohort (about 750 children) was targeted. The final sample was formed on the basis of preschools' and elementary schools' acceptance to participate. Moreover, because of lack of translation resources, elementary schools that had an exceptionally high proportion of immigrant pupils were excluded from the sample. The order of procedure was such that the feeding preschools in the area were contacted after the target schools had consented to participate. The families were then contacted via the preschools. The participation rate for the children and families was 78% in Town 1, and 80% in Town 2.

The original data in these two towns consisted of 47 elementary schools, 80 preschools, and 1306 children. In order to draw a subsample that allowed us to study a typical elementary school transition in Finnish setting, we used four criteria. First, we identified the preschools and elementary schools that were partners in actual transitional co-operation by asking the elementary schools for the names of the nearby preschool partners with whom they routinely implement transitional practices. Second, as the need for transition practices is most crucial when the transition requires overcoming a physical distance, we included the elementary school and preschool only if there was no preschool located in the elementary school building but the preschools were in a daycare center or elsewhere. Third, of these preschool partners, we included those that had sent at least 60% of their preschool children to the partner elementary school, and only the children moving between these partner organizations were included. Fourth, special education classes and special classes (e.g., foreign language class) were excluded, because starting school in these classes is a result of individual guidance or a selection process. The number of children coming from a given preschool in this sample varied from one to 26. Size of the elementary schools is reported in Table 1.

Elementary-school and preschool teachers. Thirty-six out of 41 elementary school teachers (88%) filled in the questionnaire, and 97% of them had a Master's degree in education; data were missing from one teacher. Nineteen percent had worked as a teacher for 0–5 years, 22% for 6–15 years, and 58% for at least 16 years. Eight percent of the elementary school teachers were male. The partners of 22 primary schools were 36 preschools with 45 preschool groups and 66 preschool teachers, of whom 63 (95%) filled in the questionnaire. The preschool teachers' educational background was more variable than that of the elementary school teachers, due to the ongoing changes in the education system, and the required qualifications of preschool teachers (see Hännikäinen, 2003). Eighty-six percent had a Bachelor's or a Master's degree in education, 11% had polytechnic-level education in social subjects, and three percent had some other education. The length of work experience in daycare was 0–5 years for 13%, 6–15 years for 36%, and at least 16 years for 51% of the teachers. All preschool teachers were female.

Children and families. Characteristics of the children in our sample are presented in Table 1. Mother's level of education was used as a proxy for the socioeconomic status of the family. There was no difference in mother's level of education between the subsample schools and the schools which were excluded from the subsample, either when compared within the two towns initially included in the subsample, $\chi^2(4)=7.02$, $p=.135$, or when compared within the four towns participating in the First Steps Study, $\chi^2(4)=5.08$, $p=.279$.

Table 1
Statistics for all variables.

	<i>n</i>	%	<i>M</i>	<i>SD</i>	Range	Missing data, %
Child gender, boy	398	50				
Child age at preschool March 1, 2007, months	398		79.94	3.47	74–95	5
Mother's education ^a	394		1.90	.83	1–3	9
Elementary school size	22		264	103	112–444	
Child's academic skills	398					
Preschool spring			0	1	–2.38–2.26	
Grade 1 spring			0	1	–3.01–3.60	
Number of diverse transition practices	36 ^b		3.94	1.37	1–7	
Implemented practices						
1. Familiarization with the school		86				
2. Teacher co-operation		67				
3. Joint event for parents		56				
4. Personal meeting with the teacher		39				
5. Discussions on the school entrants		100				
6. Preschool education plan and/or "growth portfolio" passed on		28				
7. The curricula written together		19				

Note. Background statistics for teachers are presented in Section 4.

^a Mother's education on three-point scale: vocational education or less, polytechnic, or university degree.

^b Reports of preschool teachers ($n = 63$) are averaged over preschools ($n = 36$).

4.2. Procedure and measures

Preschool teachers completed questionnaires in spring 2007 when the children were in preschool. The children's academic skills were tested by trained testers in preschool spring (Time 1), and grade 1 spring (Time 2).

Tests on children's academic skills. In preschool spring, all tests were carried out in an individual testing situation. The emerging reading and writing skills were assessed with three tests, which were subtests of ARMI (Lerikkanen, Poikkeus, & Ketonen, 2006). Letter knowledge was assessed by asking children to name 29 uppercase letters shown in the same random order by the experimenter. The maximum score was 29, and the Cronbach alpha was .89. Reading of words was assessed using a 10-word wordlist. The maximum score was 10, and the alpha .96. In addition, the child was asked to write his or her first name, as well as four words. The maximum score was 5, and the alpha .79. Mathematical skills were assessed with two tests. Number sequence production both forwards and backwards was assessed with four subtasks (Hannula, Räsänen, & Lehtinen, 2007). The child received 0–2 points for each response yielding the maximum score of 8, and the alpha was .70. In addition, 28 arithmetical problems expressed in numbers were presented within a three-minute time limit (Räsänen & Aunola, 2007). The maximum score was 28, and the alpha .77.

In grade 1 spring, all tests were carried out in a group situation. Decoding was assessed with two tests. In the speeded word decoding fluency test, the child was asked to select the correct word from four (phonologically similar) alternatives and link this to a picture by drawing a line between the two. The score was the number of correct responses (out of 80) marked within the two-minute time limit; the Kuder–Richardson coefficient (KR20) for the test is .97. The original task is part of a standardized national reading achievement test battery (Lindeman, 2000). The second test included 10 word chains, each consisting of 4–6 joined words (Nevala & Lyytinen, 2000). The child received one point for each correct separation of words within the time limit of 1 min and 25 s, yielding the maximum score of 40. Test–retest reliability for the test is .76. Two tests were used as measures of reading comprehension. In the first test, children answered 12 multiple-choice questions about the text, which was available to them while they responded. The maximum score was 12; the KR20 for the test is .85. The original test is part of a standardized national reading achievement test battery (Lindeman, 2000). In the second test, children were asked to agree or disagree with 60 written statements within a three-minute

time limit (adapted from Wagner, Torgesen, Rashotte, & Pearson, 2009). The maximum score was 60, and the alpha .93. Writing was assessed by asking children to write five words (Lerikkanen et al., 2006) and eight pseudowords (see Lyytinen et al., 2006; Puolakanaaho et al., 2007; Seymour, Aro, & Erskine, 2003). The maximum score was 13, and the alpha .76. Mathematical skills in grade 1 were assessed with the same arithmetical problems as in preschool (Räsänen & Aunola, 2007), the alpha for grade 1 being .86.

The variables measuring children's academic competence were standardized to enable computation of sum variables for each testing point. The sum variable *academic skills preschool* (Cronbach alpha = .80) consisted of (emergent) reading, writing, and mathematics, with equal weight, while the sum variable *academic skills grade 1* ($\alpha = .82$) consisted of decoding, reading comprehension, writing, and mathematics, with equal weight. These variables were then rescaled to a mean of 0 and a standard deviation of 1 for ease of interpretation (Table 1). The correlation between these academic measures was .66 ($p < .001$).

Questionnaire on transition practices. Implementation of seven transition practices was examined. First, several practices were adapted from the previous literature (Einarsdottir, 2003; Pianta et al., 2001; see also, e.g., Einarsdottir et al., 2008; LoCasale-Crouch et al., 2008) for pilot studies. The final set of seven practices, pertinent in Finnish school was then selected. Compared to earlier research on transition practices, which has often included quite general activities, such as flyers and open houses (see, e.g., Pianta et al., 1999; Schulting et al., 2005), the practices in this set are somewhat more intense and specific to the elementary school transition. These practices were as follows: (1) The preschool group familiarizes itself with the elementary school activities by visiting the elementary school, or by having the elementary-school teacher and/or pupils visit the preschool group. (2) The preschool teacher and the elementary-school teacher co-operate, for example, organize joint events, plan teaching together, or teach together. (3) The preschool teacher and the elementary-school teacher organize a joint event for school entrants' parents on starting school. (4) The child, the parents, and the future grade 1 teacher meet personally before the start of elementary school. (5) The preschool teacher, the grade 1 teacher, and the special workers (e.g., special education teachers, school psychologist) discuss the school entrants (e.g., skills, peer relations). (6) The child's preschool education plan and/or "growth portfolio" (includes, e.g., child's output) is passed on to the elementary-school teacher. (7) The preschool teachers and the elementary-school teachers write and revise the

preschool and grades 1 and 2 curricula together. The implementation frequency of these practices was rated by preschool teachers on a three-point scale, implemented never, 1–2 times a year, or more often/systematically. As we assume (see also Schulting et al., 2005) that concrete transition activities carried on by individual teachers usually take place within an organizational framework rather than being managed by each teacher on her own, we decided to sum the frequencies over preschools to obtain a variable that stands for the number of transition practices between each preschool–elementary school pair. We considered the consistency among reports in each preschool to be adequate, as in the 19 out of 36 preschools with two or more teachers reporting frequencies of transition practices, 68% of the reports were exactly the same, 28% differed by one point, whereas only 4% of the reports represented the opposite extremes of the scale. According to these preschool-level reports, implementation taking place more often than 1–2 times a year was quite rare. Only three out of seven practices were implemented in a frequent fashion: familiarizing with the elementary school (8% of the preschools implemented more often than 1–2 times a year), preschool teacher and elementary-school teacher co-operation (11%), and discussions on the school beginners (6%). Because of this low frequency, we decided to rescore these variables into dichotomous variables implemented/not implemented. These frequencies are presented in Table 1. A transition practice index was calculated by summing up the total number of diverse transition practices (out of the maximum of seven) implemented by preschool–school pairs. This index was used as the general measure for *number of transition practices* (Table 1).

4.3. Analysis strategy

To examine whether transition practices will impact children's skill development, we used multilevel latent growth modeling (MLGM). In these analyses, we estimated first the initial level of children's academic skills, the slope for change in skills, as well as the variation in these two factors. Next, we divided the variance into two parts: variance that was due to preschool differences (between level), and variance due to individual variance within preschools (within level). Finally, we used transition practices to predict the level and slope factors at the between-level (preschools). All MLGM analyses were performed using the Mplus 5.21 statistical program (Muthén & Muthén, 1998). We used the maximum likelihood parameter estimate with robust standard errors (MRL). Model fit precision was examined using a combination of the comparative fit index (CFI), the Tucker–Lewis index (TLI), root mean square error of approximation (RMSEA), and the standardized root mean square residual (SRMR).

5. Results

5.1. To what extent do Finnish preschool–elementary school pairs implement transition practices?

On average, implementation of four diverse practices was reported by preschools (Table 1). The most often implemented practice was discussions concerning the school beginners, which all preschools reported having with elementary schools. Moreover, familiarizing children with the grade 1 environment, and co-operation between the preschool and elementary school teacher were often implemented. Co-operation over curricula or passing on the child's education plan were rare. All preschools that had implemented one of these most rare practices, had also implemented at least two other practices. This indicates that the total number of implemented practices represents not only the quantity but also the quality of transition activities.

5.2. Does the number of transition practices predict the development of children's academic skills during grade 1?

Preschool similarity. To examine whether children in different preschools, which implemented transition practices to different extents, differ in respect to their academic skills in preschool and grade 1, we calculated intraclass correlations (ICC's) for academic skills. Preschool attendance at Time 1 was used as a clustering variable. The ICC for children's skills in preschool (Time 1) was .007 ($p = ns$, between variance estimate = .004, $SE = .009$): children in different preschools did not differ in their academic skills in preschool. The ICC for children's skills in grade 1 (Time 2) was .05 ($p < .05$, between variance estimate = .024, $SE = .015$), suggesting that children from different preschools showed different levels of academic skills in grade 1.

Multilevel latent growth modeling. To examine the relationship between children's skill development and transition practices, we conducted multilevel latent growth modeling (MLGM). Preschool attendance was a clustering variable in all subsequent analyses. The model was constructed in the following steps. First, two growth components, that is, the initial level and the rate of change (slope) were estimated for children's skills. The growth components were allowed to correlate with each other. Because we had only two measurement points, the measurement error variances were fixed to zero. The model was saturated. The results showed that correlation between the level and the slope was .35 ($p = ns$) at the between level (preschools), and $-.53$ ($p < .001$) at the within level (children). This indicates that, at the level of individual children, the children who had lower academic skills in preschool developed more during the first school year, whereas at the level of preschool attendance there was no significant association.

Second, we examined the extent to which transition practices predict the initial level of, and change in, academic skills. Consequently, we entered the number of transition practices to predict the level of, and change in, children's skills development at the between level (preschools). The final model is presented in Fig. 1. The model was saturated. The results at the preschool level showed that the number of transition practices predicted change in children's skills: the greater the variety of transition practices implemented by teachers, the more the children's skills develop. Number of transition practices predicted 67% of the variance in the development of skills at the between level (effect size).

Third, the previous MLGM analysis was repeated using each individual transition practice as a predictor of the development of skills. We did this by adding each of the six individual transition practices to a model, one at a time, to predict the initial level and change in academic skills. Four transition practices had a significant or marginally significant effect on the development of academic skills. These were passing on the children's preschool education plan and/or "growth portfolio" to the elementary school, $\beta = .61$, $p < .05$; making and revising the preschool and elementary school curricula in co-operation, $\beta = .64$, $p < .001$; concrete co-operation practices (e.g., organizing joint events, teaching together), $\beta = .50$, $p < .07$; and meeting with future teacher, $\beta = .45$, $p < .09$, all of which were marginally related to the change in academic skills (betas are standardized). The co-operation on curricula was the only practice to predict marginally significant portion, 42%, of the variance in the development of skills at the between level. When these practices were implemented, the children's academic skills developed more quickly. The effects of familiarizing the child with the school environment and jointly organized events for parents did not reach statistical significance.

The previous analyses were rerun to make sure that the previous results were not caused by school size, or selection of children into different preschools on the basis of various child or family characteristics. Each control variable, that is, elementary school size,

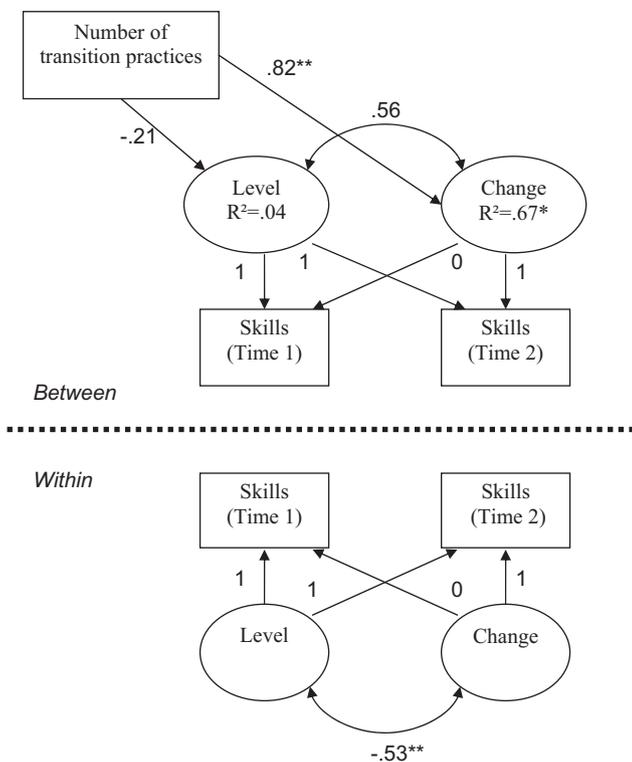


Fig. 1. MLGM for children's skills and preschool–elementary school transition practices. The paths between variables are based on standardized estimates. * $p < .01$, ** $p < .001$.

children's gender, and mothers' education was entered into a separate analysis. Entering these control variables into the model did not change the previous results.

6. Discussion

The modern ecological view of school transition emphasizes the importance of the ways in which the contexts of the school entrants connect and support the child during the period of discontinuity and change (Rimm-Kaufman & Pianta, 2000). In our longitudinal study on children's achievement, we found that the academic skills of children from preschool–elementary school pairs that implemented several supportive activities during the preschool year developed more quickly from preschool to grade 1 compared with the skills of children from pairs that used fewer practices. Co-operation over curricula between the preschool and the elementary school, as well as passing on written information about children turned out to be the most effective predictors, although they were the least commonly used practices.

6.1. Frequency of transition practices and their impacts on children's academic development

The implementation of at least some transition practices during preschool–kindergarten–elementary school transitions has been reliably reported in the United States (La Paro et al., 2000a, 2000b; Pianta et al., 1999; Rous, Hallam, McCormick, & Cox, 2010), as well as in Australia and in Iceland (Einarsdottir et al., 2008). Congruent with our first hypothesis and previous studies (e.g., Einarsdottir et al., 2008), the frequency of implementation varied both among preschool–elementary school pairs and among practices. Generally, the frequency of transition practices was modest, leading us to conclude that, on average, implementation of transition practices in these preschool–elementary school pairs still represents more

orientation to school than real transition programmes (Dockett & Perry, 2001).

Expected positive connections between transition practices and later school achievement and adaptation have recently been shown to exist but the evidence is based on cross-sectional data only (LoCasale-Crouch et al., 2008; Schulting et al., 2005). As hypothesized, our longitudinal data showed that the more versatile the implementation of transition practices deployed between preschool–elementary school pairs, the faster children's academic skills developed from preschool to grade 1.

6.2. Effective practices in school transitions: preparing for the transition, and passing on information

The results further showed that this positive association between the number of transition practices and academic development was on a minor scale replicated at the level of four individual transition practices. These practices were co-operation on curriculum issues between preschool and elementary school, passing on written information about children from preschool to elementary school, personal meetings between the family and the elementary-school teacher before school starts, and concrete co-operation between preschool and elementary-school teachers. These practices reflect successful relationships between the family, the preschool, and the elementary school, as defined by Rimm-Kaufman and Pianta (2000).

In agreement with recent arguments that alignment and coordination in early childhood education enable more effective teaching processes and more positive child outcomes (Bogard & Takanishi, 2005; Kagan & Kauerz, 2007), we found that co-operation on curriculum issues between preschool and elementary school teachers emerged as the most important factor influencing later achievement. It is possible that mutually prepared curricula create continuity between the preschool and school, offering uninterrupted teaching and learning experiences, as well as the possibility for preschool and elementary-school teachers to meet and discuss their conceptions and aims regarding the child's education and upbringing, as well as to get to know each other.

Receiving information on future pupils is considered important by school teachers (Einarsdottir et al., 2008; Pianta et al., 1999). In our study, passing on written information, e.g., an education plan or growth portfolio, about the child from preschool to elementary school was one of the best predictors of academic development. Passing on information about their child is sometimes opposed by parents, because they fear that the information might result in a 'Pygmalion in the classroom' effect (see Rosenthal & Jacobson, 1968/1992). Our results suggest that passing on information is useful, at least when the information is comprehensive and documented for repeated use. Adequate information about pupils might help the elementary-school teacher to treat and teach the pupils of the new class according to their personal traits and needs. Nevertheless, passing on written information was among the least often implemented transition practices. At the same time, discussions on the school beginners between preschool and elementary-school personnel were the most often implemented practice. Interestingly, our new results (Ahtola et al., 2011) show that these discussions are considered the most important transition practice by elementary-school teachers. Unfortunately, due to the very small variance, we were not able to test how implementation of these discussions might be associated with later learning.

It has also been stated (La Paro et al., 2000a, 2000b; Nelson, 2004; Pianta et al., 1999) that transition practices should be intensive enough and give an opportunity for personal contacts instead of generic ones. Accordingly, and consistently with Schulting et al. (2005), we found that an orientative event organized for all parents did not predict later school achievement. Unexpectedly, the activi-

ties that were intended to directly prepare preschool children and individual parents for the upcoming elementary-school transition were not strong predictors of later achievement either. We assume that this may be because only few, if any, preschool–elementary school pairs implemented these practices systematically. Activities taking place only once or twice a year might not be sufficient, as was stated by Bronfenbrenner and Morris (1998): developmentally effective activities “must take place on a fairly regular basis, over an extended period of time.” (p. 996). The development of trust between parents and teachers also presupposes frequent and satisfying contact in different situations (Adams & Christenson, 2000). Alternative explanation for the lack of associations may be our focus on academic skills, instead of, for example, socioemotional adjustment or parent–school relationships.

6.3. Limitations and future directions

Albeit based on longitudinal data on children's academic achievement, our results are still ambiguous in terms of positive effects of the transition practices on learning. We ask, like Schulting et al. (2005), to what extent the transition practices, instead of being really effective themselves, are rather a characteristic of well-functioning schools and preschools, which have good leadership, high-quality teachers, and other good practices. It is likely that certain school environments support certain ways of handling the school transition. Regarding these school-level factors, we were able to rule out only the possible effect of school size. As Schulting et al. (2005) and LoCasale-Crouch et al. (2008) have stated, randomized intervention designs and more comprehensive measuring of relevant teacher-, school-, and organization-level factors, as well as the quality of activities, are further necessary to clarify the true positive effects and mechanisms of transition practices. In addition, the various actualized transition experiences of individual children and families attending the same preschool and elementary school should be investigated in further research. It would also be of interest to identify factors that regulate the implementation of transition practices, as it seems that teachers consider these practices useful more often than they actually implement them (Einarsdottir et al., 2008; Pianta et al., 1999). It is known that training in early education and transition practices affects the use of transition practices at the level of individual teachers (Early, Pianta, Taylor, & Cox, 2001; Nelson, 2004; Rous et al., 2010). More information is needed especially about preschool- and school-level, as well as local-level factors (see also LoCasale-Crouch et al., 2008), because the transition practices are usually not and should not be the responsibility of individual teachers only. Particularly, the principal of the elementary school is in a crucial position (Smolkin, 1999).

7. Conclusion

The results of the present study showed that one means of promoting successful school transition is enhancing relationships between the child, family, preschool, and elementary school by using appropriate transition practices. This is consistent with the general means of pursuing better learning and well-being for children and adolescents in schools: in addition to individual pupils and families, the focus should be on the school staff (see, e.g., Conoley & Gutkin, 1995; Gutkin & Conoley, 1990; Hojniski & Missall, 2006; Sheridan & Gutkin, 2000) and on the school system with a proactive and preventive emphasis (Hoagwood & Johnson, 2003; Hunter, 2003; Merrell & Buchanan, 2006; Strein, Hoagwood, & Cohn, 2003).

References

Adams, K. S., & Christenson, S. L. (2000). Trust and the family–school relationship examination of parent–teacher differences in elementary and secondary grades. *Journal of School Psychology, 38*, 477–497.

- Ahtola, A., Poikonen, P.-L., Kontoniemi, M., Niemi, P., & Nurmi, J.-E., (2011). *Successful handling of entrance to formal schooling: Transition practices as a local innovation*, submitted.
- Bogard, K., & Takanishi, R. (2005). PK-3: An aligned and coordinated approach to education for children 3 to 8 years old. *Social Policy Report, 19*, 3–23.
- Bronfenbrenner, U., & Morris, P. A. (1998). The ecology of developmental processes. In W. Damon, & R. Lerner (Eds.), *Handbook of child psychology. Theoretical models of human development* (5th ed., Vol. 1, pp. 993–1028). New York, NY: John Wiley & Sons.
- Broström, S. (2003). Transition from kindergarten to school in Denmark: Building bridges. In S. Broström, & J. T. Wagner (Eds.), *Early childhood education in five Nordic countries. Perspectives on the transition from preschool to school* (pp. 39–74). Gylling, Denmark: Academica.
- Carlton, M. P., & Winsler, A. (1999). School readiness: The need for a paradigm shift. *School Psychology Review, 28*, 338–352.
- Clark, P., & Zygmunt-Fillwalk, E. (2008). Ensuring school readiness through a successful transition to kindergarten: The Indiana Ready Schools Initiative. *Childhood Education, 84*, 287–293. Retrieved from http://findarticles.com/p/articles/mi_qa3614/is_200801/ai_n27995213/pg_7/?tag=content;col1.
- Conoley, J. C., & Gutkin, T. B. (1995). Why didn't – Why doesn't – School psychology realize its promise? *Journal of School Psychology, 33*, 209–217.
- (2000). *Core curriculum for preschool education in Finland*. Helsinki, Finland: Finnish National Board of Education.
- Dockett, S., & Perry, B. (2001). Starting school: Effective transitions. *Early Childhood Research & Practice, 3*. Retrieved from <http://ecrp.uiuc.edu/v3n2/dockett.html>.
- Dockett, S., & Perry, B. (2004a). Starting school: Perspectives of Australian children, parents and educators. *Journal of Early Childhood Research, 2*, 171–189. doi:10.1177/1476718X04042976
- Dockett, S., & Perry, B. (2004b). What makes a successful transition to school? Views of Australian parents and teachers. *International Journal of Early Years Education, 12*, 217–230. doi:10.1080/0966976042000268690
- Early, D. M., Pianta, R. C., Taylor, L. C., & Cox, M. J. (2001). Transition practices: Findings from a national survey of kindergarten teachers. *Early Childhood Education Journal, 28*, 199–206.
- Einarsdottir, J. (2003). Charting a smooth course: Transition from playschool to primary school in Iceland. In S. Broström, & J. T. Wagner (Eds.), *Early childhood education in five Nordic countries. Perspectives on the transition from preschool to school*. (pp. 77–99). Gylling, Denmark: Academica.
- Einarsdottir, J. (2006). From pre-school to primary school: When different contexts meet. *Scandinavian Journal of Educational Research, 50*, 165–184. doi:10.1080/00313830600575965
- Einarsdottir, J., Pery, B., & Dockett, S. (2008). Transition to school practices: Comparisons from Iceland and Australia. *Early Years: Journal of International Research & Development, 28*, 47–60. doi:10.1080/09575140801924689
- Färkkilä, N., Kahiluoto, T., & Kivistö, M. (2005) *Lasten päivähoidon tilannekatsaus. Syyskuu 2005* [Report on the Situation of Children's Daycare. September 2005]. Sosiaali- ja terveystieteiden selvityksiä, 2006:16. Helsinki, Finland: Ministry of Social and Health Services.
- Graue, E. (1999). Diverse perspectives on kindergarten contexts and practices. In R. C. Pianta, & M. J. Cox (Eds.), *The transition to kindergarten* (pp. 109–142). Baltimore, MD: Brookes.
- Graue, E. (2006). The answer is readiness—Now what is the question? *Early Education and Development, 17*, 43–56.
- Gutkin, T. B., & Conoley, J. C. (1990). Reconceptualizing school psychology from a service delivery perspective: Implications for practice, training, and research. *Journal of School Psychology, 28*, 203–223.
- Hännikäinen, M. (2003). Transition to school in Finland: From early childhood and preschool education to basic education. In S. Broström, & J. T. Wagner (Eds.), *Early childhood education in five Nordic countries. Perspectives on the transition from preschool to school* (pp. 77–99). Gylling, Denmark: Academica.
- Hannula, M. M., Räsänen, P., & Lehtinen, E. (2007). Development of counting skills: Role of spontaneous focusing on numerosity and subitizing-based enumeration. *Mathematical Thinking and Learning, 9*, 51–57.
- Hoagwood, K., & Johnson, J. (2003). School psychology: A public health framework I. From evidence-based practices to evidence-based policies. *Journal of School Psychology, 41*, 3–21. doi:10.1016/S0022-4405(02)00141-3
- Hojnoski, R. L., & Missall, K. N. (2006). Addressing school readiness: Expanding school psychology in early education. *School Psychology Review, 35*, 602–614.
- Holopainen, L., Ahonen, T., Tolvanen, A., & Lyytinen, H. (2000). Two alternative ways to model the relation between reading accuracy and phonological awareness at preschool age. *Scientific Studies of Reading, 4*, 77–100.
- Hunter, L. (2003). School psychology: A public health framework III. Managing disruptive behaviour in schools: The value of a public health and evidence-based perspective. *Journal of School Psychology, 41*, 39–59. doi:10.1016/S0022-4405(02)00143-7
- Kagan, S. L., & Kauerz, K. (2007). Reaching for the whole. Integration and alignment in early education policy. In R. C. Pianta, M. J. Cox, & K. L. Snow (Eds.), *School readiness and the transition to kindergarten in the era of accountability* (pp. 11–30). Baltimore, MD, USA: Brookes.
- Kagan, S. L., & Neuman, M. J. (1998). Lessons from three decades of transition research. *The Elementary School Journal, 98*, 365–379.
- Kim, J., & Suen, H. K. (2003). Predicting children's academic achievement from early assessment scores: A validity generalization study. *Early Childhood Research Quarterly, 18*, 547–566. doi:10.1016/j.ecresq.2003.09.011

- Kumpulainen, T. (Ed.). (2008). *Koulutuksen määrälliset indikaattorit 2007 [Quantitative Indicators of Education 2007]*. Tampere, Finland: Finnish National Board of Education.
- La Paro, K. M., & Pianta, R. C. (2000). Predicting children's competence in the early school years: A meta-analytic review. *Review of Educational Research, 70*, 443–484.
- La Paro, K. M., Pianta, R., & Cox, M. (2000a). Kindergarten teachers' reported use of kindergarten to first grade transition practices. *The Elementary School Journal, 101*, 63–78.
- La Paro, K. M., Pianta, R., & Cox, M. (2000b). Teachers' reported transition practices for children transitioning into kindergarten and first grade. *Exceptional Children, 67*, 7–20.
- Ladd, G. W., & Price, J. M. (1987). Predicting children's social and school adjustment following the transition from preschool to kindergarten. *Child Development, 58*, 1168–1189.
- Lerkanen, M.-K., Poikkeus, A.-M., & Ketonen, R. (2006). *ARMI—Luku- ja kirjoitustaidon arviointimateriaali 1. luokalle [ARMI—A Tool for Assessing Reading and Writing Skills in Grade 1]*. Helsinki, Finland: WSOY.
- Lewit, E. M., & Baker, L. S. (1995). School readiness. *Critical Issues for Children and Youths, 5*, 128–139.
- Lindeman, J. (2000). *ALLU—Ala-asteen lukutesti: käyttäjän käsikirja [The Comprehensive School Reading Test Manual]*. Turku, Finland: Center for Learning Research, Turku University.
- LoCasale-Crouch, J., Mashburn, A. J., Downer, J. T., & Pianta, R. 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
- Lyytinen, H., Erskine, J., Tolvanen, A., Torppa, M., Poikkeus, A.-M., & Lyytinen, P. (2006). Trajectories of reading development. A follow-up from birth to school age of children with and without risk for dyslexia. *Merrill-Palmer Quarterly, 52*, 514–546.
- Mangione, P. L., & Speth, T. (1998). The transition to elementary school: A framework for creating early childhood continuity through home, school, and community partnerships. *The Elementary School Journal, 98*, 381–397.
- Margetts, K. (2007). Preparing children for school—benefits and privileges. *Australian Journal of Early Childhood, 32*(2), 43–50.
- Meisels, S. J. (1996). Performance in context: Assessing children's achievement at the outset of school. In A. J. Sameroff, & M. M. Haith (Eds.), *The five to seven years shift. The age of reason and responsibility* (pp. 407–431). Chicago, IL: The University of Chicago Press.
- Meisels, S. J. (1999). Assessing readiness. In R. C. Pianta, & M. J. Cox (Eds.), *The transition to kindergarten* (pp. 39–66). Baltimore, MD: Brookes.
- Meisels, S. J. (2007). Accountability in early childhood: No easy answers. In R. C. Pianta, M. J. Cox, & K. L. Snow (Eds.), *School readiness and the transition to kindergarten in the era of accountability* (pp. 31–47). Baltimore, MD: Brookes.
- Merrell, K. W., & Buchanan, J. (2006). Intervention selection in school-based practice: Using public health models to enhance systems capacity of schools. *School Psychology Review, 35*, 167–180.
- Muthén, L., & Muthén, B. O. (1998–2007). *Mplus Version 5.21*. Retrieved from <http://www.statmodel.com>.
- (2004). *National core curriculum for basic education*. Helsinki, Finland: Finnish National Board of Education.
- National Education Goals Panel. (1998). *Ready schools*. Washington, D.C.: Author.
- Nelson, R. F. (2004). The transition to kindergarten. *Early Childhood Education Journal, 32*, 187–190.
- Nevala, J., & Lyytinen, H. (2000). *Sanaketjutesti [Test of word chains]*. Jyväskylä, Finland: Niilo Mäki Institute, Jyväskylä University.
- Niesel, R., & Griebel, W. (2007). Enhancing the competence of transition systems through co-construction. In A.-W. Dunlop, & H. Fabian (Eds.), *Informing transitions in the early years. Research, policy and practice* (pp. 21–32). Maidenhead, England: McGraw-Hill, Open University Press.
- Organization for Economic Co-operation and Development. (2001). *Knowledge and skills for life. First results from the OECD program for international student assessment (PISA) 2000*. Retrieved from http://www.oecd.org/document/46/0,3343,en_32252351_32236159_33688686_1.1.1.1.00.html.
- Organization for Economic Co-operation and Development. (2004). *Learning for tomorrow's world. First results from PISA 2003*. Retrieved from http://www.pisa.oecd.org/document/55/0,3343,en_32252351_32236173_33917303_1.1.1.1.00.html.
- Organization for Economic Co-operation and Development. (2007). *PISA 2006. Science competencies for tomorrow's world. Analysis (Vol. 1)*. Retrieved from http://www.oecd.org/document/2/0,3343,en_32252351_32236191_39718850_1.1.1.1.00.html.
- Petriuskyj, A., Thorpe, K., & Tayler, C. (2005). Trends in construction of transition to school in three western regions, 1990–2004. *International Journal of Early Years Education, 13*, 55–69. doi:10.1080/09669760500048360
- Petäjaniemi, T., & Pokki, S. (2010). *Selvitys päivähoiton ja varhaiskasvatuksen asemasta valtionhallinnossa [The report on organization of daycare and early childhood education in the national administration]*. The Ministry of Social Affairs and Health & Ministry of Education, Finland. Retrieved from <http://www.stm.fi/tiedotteet/tiedote/view/1485223#fi>.
- Pianta, R. C., Cox, M. J., Taylor, L., & Early, D. (1999). Kindergarten teachers' practices related to the transition to school: Results of a national survey. *The Elementary School Journal, 100*, 71–86.
- Pianta, R. C., Kraft-Sayre, M., Rimm-Kaufman, S., Gercke, N., & Higgins, T. (2001). Collaboration in building partnerships between families and schools: The National Center for Early Development and Learning's kindergarten transition interventions. *Early Childhood Research Quarterly, 16*, 117–132.
- Piotrkowski, C. S., Botsko, M., & Matthews, E. (2001). Parents' and teachers' beliefs about children's school readiness in a high-need community. *Early Childhood Research Quarterly, 15*, 537–558.
- Poikkeus, A.-M., Niemi, P., Lerkanen, K., Ahonen, T., Siekkinen, M., & Nurmi, J.-E. (2006). *The First Steps study*. Turku, and Eastern Finland: Universities of Jyväskylä.
- Puolakanaho, A., Ahonen, T., Aro, M., Eklund, K., Leppänen, P. H. T., Poikkeus, A.-M., & Lyytinen, H. (2007). Very early phonological and language skills: Estimating individual risk of reading disability. *Journal of Child Psychology and Psychiatry, 9*, 923–931. doi:10.1111/j.1469-7610.2007.01763.x
- Ramey, S. L., & Ramey, C. T. (1994). The transition to school. *Phi Delta Kappan, 76*, 194–199.
- Ramey, S. L., & Ramey, C. T. (1998). Commentary. The transition to school: Opportunities and challenges for children, families, educators, and communities. *The Elementary School Journal, 98*, 293–295.
- Rimm-Kaufman, S. E., & Pianta, R. C. (2000). An ecological perspective on the transition to kindergarten: A theoretical framework to guide empirical research. *Journal of Applied Developmental Psychology, 21*, 491–511.
- Rosenthal, R., & Jacobson, L. (1968/1992). *Pygmalion in the classroom. Teacher expectations and pupils' intellectual development (Newly expanded edition)*. Carmarthen, Wales, UK: Crown House Publishing.
- Räsänen, P., & Aunola, K. (2007). *Test of arithmetic skills*. Unpublished test material. First Steps study. University of Jyväskylä.
- Rous, B., Hallam, R., McCormick, K., & Cox, M. (2010). Practices that support the transition to public preschool programs: Results from a National Survey. *Early Childhood Research Quarterly, 25*, 17–32. doi:10.1016/j.ecresq.2009.09.001
- Sameroff, A., & McDonough, S. C. (1994). Educational implications of developmental transitions. *Phi Delta Kappan, 76*, 188–193.
- Schulting, A. B., Malone, P. S., & Dodge, K. A. (2005). The effect of school-based kindergarten transition policies and practices on child academic outcomes. *Developmental Psychology, 41*, 860–871. doi:10.1037/0012-1649.41.6.860
- Seymour, P. H. K., Aro, M., & Erskine, J. (2003). Foundation literacy acquisition in European orthographies. *British Journal of Psychology, 94*, 143–174.
- Sheridan, S. M., & Gutkin, T. B. (2000). The ecology of school psychology: Examining and changing our paradigm for the 21st century. *School Psychology Review, 29*, 485–502.
- Silvén, M., Poskiparta, E., & Niemi, P. (2004). The odds of becoming a precocious reader of Finnish. *Journal of Educational Psychology, 96*, 152–164. doi:10.1037/0022-0663.96.1.152
- Smolkin, L. B. (1999). The practice of effective transitions. Players who make a winning team. In R. C. Pianta, & M. J. Cox (Eds.), *The transition to kindergarten* (pp. 325–349). Baltimore, MD: Brookes.
- Snow, K. L. (2006). Measuring school readiness: Conceptual and practical considerations. *Early Education and Development, 17*, 7–41.
- Strein, W., Hoagwood, K., & Cohn, A. (2003). School psychology: A public health perspective I. Prevention, populations, and systems change. *Journal of School Psychology, 41*, 23–38. doi:10.1016/S0022-4405(02)00142-5
- Thorsen, A. A., Bø, I., Løge, I. K., & Omdal, H. (2006). Transition from day-care centres to school: What kind of information do schools want from day-care centres and parents, and what kind of information do the two parties want to give schools? *European Early Childhood Education Research Journal, 14*, 77–90.
- Vernon-Feagans, L., & Blair, C. (2006). Measurement of school readiness. *Early Education and Development, 17*, 1–5.
- Wagner, R. K., Torgesen, J. K., Rashotte, C. A., & Pearson, N. A. (2009). *Test of silent reading efficiency and comprehension (TOSREC), Grade 1*. Austin, TX: Pro-Ed.