ENCYCLOPEDIA
on Early Childhood
Development

School readiness

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Synthesis

How important is it?

Children and their families experience a large discontinuity as they make the transition into kindergarten. This shift is notable despite the fact that more than 80% of North American children receive care on a regular basis from a non-parental caregiver prior to this transition. Many children are able to make this transition well, behaving skilfully with peers, interacting well with teachers in these new social settings, and appearing generally well adjusted, all of which predict success during the elementary school years. Other children do not make the transition as easily, either because they are not ready for schooling or because schools are not ready for them.

Researchers, policy-makers, educators and parents are trying to discover what it means for children to be ready for school. Important dimensions of school readiness include physical, motor, linguistic, cognitive, social and emotional development, as well as attitudes toward learning and general knowledge. An American survey of kindergarten teachers showed that teachers identified ready children as those who are physically healthy, well rested and well fed; able to communicate needs, wants and thoughts verbally; and curious and enthusiastic in approaching new activities. Parents, in contrast, typically define readiness in terms of academic abilities, such as the ability to count or knowing the alphabet. These two perspectives are complementary and need to be reconciled.

School readiness leads to school success. Accumulating evidence has revealed that children's performance during the primary school years (kindergarten through grade three) has an important bearing on later success in school and life; in response, understanding how young children are best prepared to enter and succeed in grade school has become a priority for parents, educators, legislators and researchers.

What do we know?

A child is seen as successful in school when a positive attitude about school and learning is developed; supportive social ties with teachers and classmates are formed; comfortable and positive emotions, as well as positive engagement and participation in the classroom, are

experienced; and academic achievement and progress are shown.

Research on school readiness has focused on early markers that are closely related to children's school success. Thus, early signs of cognitive ability and maturity, children's work-related and learning-related social skills and self-regulatory skills have been identified as factors that contribute to and define "school readiness". Children's age is also a marker of school readiness insofar as it indicates maturity in the cognitive, social and self-regulatory domains. However, age per se is a poor predictor of later school success.

Other factors may influence children's success in school and life, including attributes of the child, family, previous child-care environments and the nature of relationships with teachers and peers. These factors seem to operate according to an interactive (i.e., multiplicative) and transactional (i.e., bi-directional) mode rather than an additive mode. To illustrate, children bring to school their own individual attributes, such as gender, age, aptitude, language, prior experiences and behavioural dispositions (e.g., aggressiveness, self-regulatory abilities, sociability and anxiety-withdrawal), all of which may affect the way they approach their classmates, teachers and the school environment. In turn, the nature of the relationships that children form with teachers and peers makes an independent contribution to their psychological and school adjustment, above and beyond children's own behavioural and cognitive dispositions. Chronic exposure to the negative (e.g., rejection/victimization by peers or teachers, friendlessness) or positive aspects of these social experiences (e.g., peer-group acceptance) has greater consequences for children's psychological and school adjustment than transient exposure.

Parents also have a role to play in determining their child's readiness for school. The quality of parent-child relationships, specifically parental sensitivity and stimulation, has a clear and frequently documented correlation with early school success, either as a main contributor or a protective factor. Also, the quality of the relationship between the parents before their child enters school has been shown to predict the child's social and academic competence throughout elementary and high school.

Children also benefit from some form of educational program at a very early age. There is research demonstrating that attributes of children's child-care environment directly affect a child's transition and adjustment to school. These effects appear even more pronounced among children exposed to high-risk conditions. Programs based on principles of quality care, higher

caregiver training and smaller child-staff ratio all contribute positively to a child's readiness for school. Instructional needs and children's ability to profit from school depend on the types of instructional settings they encounter as they move from home to school and from grade to grade.

Schools and communities make also significant contributions to children's connections with school, both in the transition process and in later school engagement.

In sum, a child's initial experiences in school are critical. Research suggests that children's school outcomes, especially achievement, remain remarkably stable after the first years of school; interventions are more likely to be successful in the early school years; and how children adapt to their earliest school experiences has long-term implications for cognitive and social development and for dropping out of high school.

What can be done?

Considering the strong links between school readiness and children's later successes in school and life, attention is appropriately focused on optimizing children's readiness. Appropriate nutrition, accessible health care, parents as children's first teachers, and the availability of quality preschool and early education programs have been identified as critical conditions that support school readiness.

Indeed, good-quality infant-toddler programs have been shown to be effective in changing the environments babies experience in the early years in ways consistent with enhancing children's development. Among the programs that have been thoroughly evaluated, Early Head Start was among the most impressive because it contributed to several aspects of young children's (two- and three-year-olds) readiness and, at the same time, increased the quality of conditions that support growth in readiness (e.g., competent teaching by parents and appropriate nutrition and health care).

Extensive study of two model programs (the High/Scope Perry Preschool Program and the Carolina Abecedarian Study) has shown that high quality early childhood education can have significant and long-term positive effects on school readiness, and are significantly more beneficial to children from disadvantaged families. Although we know much less about the effects of the typical preschool programs experienced by most children, several studies in the U.S. and elsewhere have demonstrated positive benefits for school readiness.

For the positive benefits of early childhood programs to be long-lasting, programs must be of high quality and focus on didactic learning activities (letters and numbers), while encouraging play-oriented and discovery-learning activities in a language-rich and emotionally-supportive environment. Many successful programs also include a family component. Programs designed to prepare children for kindergarten need to consider the ways in which they teach social and self-regulatory skills, as well as enhance cognitive abilities and engage parents in this process.

It is also desirable to focus on the school transition period to improve children's as well as schools' readiness. However, given that school readiness is multidimensional, parents and caregivers still disagree on what the term really means. Transition practices are therefore necessary to help families and schools agree on appropriate ages for school entry and develop congruent expectations for the kindergarten year.

Although opinions differ, certain practices have been shown to result in an optimal school transition experience for children. Preschool and school-age services that are integrated and coordinated maximize success as children enter school. Such practice, which likely results in greater public support and higher quality programs, is currently in place in Sweden, New Zealand, Spain, Scotland and the UK. Prior to the start of kindergarten, a rapport should already be established among the child, the kindergarten teacher, pre-kindergarten teachers, peers and the parent. Practices should be individualized and engage the child, family and preschool setting prior to the first day of school. Multiple aspects of the familial context, such as the couple's relationship quality, must be addressed in these interventions and should be introduced early, if possible before school entry. The quality of the classroom environment should be constructed to meet children's needs. There is evidence that teacher training in transition practices leads to increased use of transition practices of all types.

In reality, however, most children receive little in the way of formal assistance before they enter school, and many of the services that are provided are perfunctory in nature and tend to be implemented belatedly, just before children enter kindergarten. Despite greatly expanded investment in preschool programs, the achievement gap between advantaged and disadvantaged children remains. More research is needed to better understand the transition process beginning in the first years of life. From a policy perspective, consensus about the importance of and best practices for maximizing school readiness for all children is lacking.

School Entry Age

Deborah J. Stipek, PhD

Stanford University School of Education, USA

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Introduction

At what age should children enter formal schooling? Practices vary widely across countries and localities within countries, and even among families within small communities. The empirical question concerns the age at which children are emotionally and intellectually ready for a formal school program.

Subject

Policy-makers debate the age at which school entry should be allowed, and when it should be required.[1] Many parents struggle with the question of whether they should send their children to school as soon as they are eligible, or keep them out for another year hoping to increase their likelihood of success. This report summarizes evidence on the effects of the age at which children enter school on their social and academic development.

Problems

Identifying the appropriate age for children to enter school is complicated by the fact that children do not all develop at the same pace. Substantial variation in “readiness” will be found regardless of the age at which children are allowed or required to enter school depending on children’s experiences prior to school entry. Age, therefore, will always be a weak predictor of readiness.

Research Context

Three strategies have been used to assess the effects of the age of school entry on children's academic achievement, and occasionally on other outcomes. First, studies have compared outcomes for children who have delayed entry by a year with children who entered school when they were eligible, or outcomes associated with changes in school entry ages. A second methodological strategy is to compare children in the same grade with different birth dates. In

any one grade, there is at least a 12- month spread in ages. Assuming that children's birth dates are randomly distributed, associations between this natural variation in age of entry and child outcomes suggest an age effect. Few of the studies using this methodology assess change in achievement over the school year; they therefore cannot be used to determine whether older children benefit relatively more (i.e., make greater gains) from schooling than do younger children, only whether older children perform better on average than younger children. The third and most powerful strategy compares children who are the same age but in different grades, as well as children who are a year apart in age but in the same grade. This strategy provides information on the relative effects of an additional year of time (maturation and general out-of-school experience) versus an additional year of schooling.

Research Results

Entry age. Studies examining children who have delayed their entry into school by a year are difficult to interpret because there is a selection bias in which children parents decide to hold out of school for a year. The findings of studies that compared children who were held out to those who began school when they were eligible are not consistent. If differences between the groups in child outcomes are found, whatever the direction, the differences are modest. In a study that examined the effect of changes in state school entry dates, the earlier cutoff was associated with strong effects in math and reading achievement at 4th grade, weaker effects at 8th grade, and no effect at 12-grade.[2] A few other studies have found effects of age at school entry on academic achievement[3,4,5] and attention deficit and hyperactivity[6,7,8] through primary school.

Age differences within grade. The findings of studies that compare children who are relatively old versus young for their grade also vary somewhat, although a review of research concluded that there is strong evidence for relatively older children having an advantage in achievement and social-emotional adjustment and behavior.[9] In most of the studies, however, the advantage is significantly reduced or disappears by the end of primary school.

In summary, these studies suggest some small advantage in being older, but the advantage typically diminishes or disappears with age. The findings of studies examining relative age do not suggest that being older is better in some absolute sense. Depending on the birth-date cut-off in the state or community, a relatively old child in one study could have been an average-aged child in another study. The findings also do not suggest that older children learn more in school than younger children do. The age differences, when found, were usually stronger at the beginning of

school than in the later grades, indicating that the younger children actually tended to learn more, often catching up with their older peers after a few years in school. Most studies do not compare age to other factors influencing student achievement, but in one that did, the proportion of risk of poor achievement attributed to race and socioeconomic factors was 13 times larger than that contributed by age.[10]

School versus time to mature. Most relevant to the question of school entry age are studies comparing children who are the same age but in different grades *and* children who are in the same grade but approximately a year apart in age. The first comparison provides information on the effect of a year of schooling, holding age constant. The second comparison provides information on the effect of chronological age, holding the number of years of schooling constant.

Findings from studies using these methods suggest that schooling is the more potent variable in most of the cognitive skills measured. In math and most aspects of reading and literacy in most studies, children who were in school gained more in a year than children the same age who were not in school. The evidence also suggests that age, at least in the ranges studied, was not a factor in how much children benefited from a year of schooling.[11,12]

The studies comparing age and school effects suggest that educational intervention found in schools contributes more to children's cognitive competencies overall than does maturation, and that relatively young children benefit from school as much as relatively older children. The school effect is strong in an absolute as well as a relative sense. In the Crone and Whitehurst study, for example, a year in school explained 62% of the literacy skill improvements at the kindergarten level, and 81% in second grade.[13] Cahan and Cohen report that the effect of a year in school was twice the effect of a year of age.[14]

Conclusion

The evidence suggests that within the five- to six-year-old range in which most children begin school in the U.S. (where most of the studies cited were conducted), age is a weak predictor of ultimate academic success. There is some evidence that time in school appears to contribute more to young children's academic skills than time engaged in other activities outside of school. Research on day care and early childhood education also suggests advantages of centre care for children in the preschool years.[15] It is, therefore, clear that children benefit from some form of

educational program at a very early age.

Many early childhood experts have called into question the very notion of "school readiness." Clearly, all children at all ages are "ready to learn." The meaningful question is not whether a child is ready to learn, but rather what a child is ready to learn. Even “reading readiness” – a concept with a long history in early childhood development – has little meaning in the context of current conceptualizations of emerging literacy, which includes general knowledge, language and vocabulary skills, and even early scribbling. Literacy, according to current experts, begins to develop long before children enter school.[16] Current conceptions of mathematics also embrace the notion of gradual development that begins early in life. Recent work on the development of mathematical understanding shows that an understanding of basic number concepts is seen and can be promoted in toddlers.[17,18] The important policy issues are how to give all young children access to educational programs, and how to make sure that school programs are appropriate for the particular social and academic skills of the children in them.

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School Transitions/School Readiness: An Outcome of Early Childhood Development ~ Perspective: Children's Social and Scholastic Development — Findings from the Pathways Project

Gary W. Ladd, PhD, Becky Kochenderfer-Ladd, PhD

Arizona State University, USA

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Introduction

The Pathways Project was a 15-year longitudinal study funded by the National Institutes of Health. Its goal was to enhance our understanding of multiple factors—including those associated with the child, family, school, and peers—that influence children's development and adjustment as they begin kindergarten and continue through their formal schooling. The study was called the Pathways Project because it was designed to identify the pathways that children establish early in their educational journeys and follow as they progress through school, while examining the stability of these trajectories over time, which included both continuity and change. Additionally, the study examined the relationship between these trajectories and children's developing psychological, social, and academic adjustment. Throughout the Pathways Project, data were collected annually on children's adjustment and progress from kindergarten through 12th grade and beyond. Participants, including both children and their families, were tracked across geographical moves and changes in school systems.

The Concept of School Readiness

School readiness has been defined in various ways. However, it generally encompasses three key elements: the individual child's preparedness for schooling, the school's preparedness and ability to engage and accommodate children, and the capacity of families and communities to provide optimal support for early childhood development.[1] This concept has gained importance due to a growing body of evidence linking various aspects of readiness to children's later health and development across several areas. These areas include academic performance, social-emotional competence, vocational success, and mental health.[2,3]

Subject

The Pathways Project had several objectives, with a significant focus on understanding how early childhood, family dynamics, peer relationships, and school characteristics influence children's initial attitudes toward school and their level of classroom participation, including their engagement in academic and social tasks. Another key aim was to analyze how children's early classroom behaviors and their interactions with peers and teachers relate to indicators of both short-term and long-term success in school, as well as their social-emotional competence and mental health. This goal involved examining early individual differences in these characteristics and social connections, how they change over time (i.e., their trajectories), and their relationship to ongoing and future indicators of children’s school and socioemotional adjustment. The project's aims aligned with well-established national initiatives focused on school readiness, preventive education, and the assessment of children's educational progress. Findings from the Pathways Project have been published in many scientific journals and reported by national and international news media.

Problems

We began our research by examining the earliest level of formal schooling to understand how children transition to kindergarten. We aimed to identify factors that might lead them toward successful or unsuccessful social, psychological, and academic adjustment. Additionally, we examined how early school experiences influence children's trajectories relative to their educational engagement and success in later grades.

In recent years, we have focused on the relationships among both temporary and lasting characteristics of children, families, peers, and school environments, and how these factors relate to school adjustment and success during the middle and high school years. Throughout this project, we have been guided by key questions, such as: “What helps children adapt to new challenges and succeed in school? What child, classroom, and family factors are likely to promote or hinder children's success in school?”

Our goal is to address these questions and provide findings that will benefit parents, teachers, and school administrators.

Research Context

Our primary research contexts included the child, the school, the classroom, and the family. We examined various factors within these contexts that may affect children’s success in school and life, including children’s characteristics and their relationships within families, peer groups, classrooms, and schools.

We work from the perspective that every child brings a unique set of attributes to school, such as gender, age, cognitive and social characteristics and abilities, language skills, and prior experiences. These factors have been hypothesized to influence how children interact with classmates, teachers, and the school environment. Among these attributes are specific dispositions and social skills, which may manifest as traits such as independence, curiosity, aggressiveness, kindness, and other forms of prosocial behavior.

We recognize that a child's responses to school are influenced by the relationships they build with others and the experiences they have within those relationships, whether positive or negative. In this investigation, we have examined the dynamics of the relationships children have with family members, friends, classmates, teachers, and other adults.

Children have different instructional needs, and their success in school largely depends on the educational environments they experience as they move from home to school and advance through each grade. In the Pathways Project, we attempted to document and analyze these factors annually throughout the study.

Key Research Questions

Our research into children's development covers many areas, with one of our guiding principles being that school adjustment relies on more than just the obvious predictors, such as the child’s intellectual aptitude, language skills, and family background. While these factors are known to be significant, particularly for younger children, we believe they alone do not provide a complete understanding of what contributes to healthy social, psychological, and academic adjustment in school settings over the long term.

To illustrate, we think a complex series of factors influences children's success in school. First, the way children interact with their classmates and how peers treat them can significantly impact the relationships they form in the classroom. Behaviors, such as whether children are active or passive, cooperative or argumentative, and helpful or demanding, while working or playing with classmates, were hypothesized to have important consequences for their

relationships with both peers and teachers.

Second, we hypothesized that, once relationships with teachers and classmates are established, the quality of these relationships and the experiences they provide may affect how much children engage and participate in the school environment.

Third, we hypothesized that as children's school attitudes and participation form and develop, these factors influence their academic progress. Children who enjoy school and actively participate in classroom activities tend to show greater academic gains than those who dislike school and engage less.

We define success in school as a straightforward concept that includes several aspects of children's school adjustment. A child can be considered successful in school when they: (a) develop positive attitudes and feelings about school and learning, (b) form supportive social ties with teachers and classmates, (c) feel comfortable and relatively happy in the classroom rather than anxious, lonely, or upset, (d) are interested and motivated to learn and participate in classroom activities (engagement), and (e) achieve and progress academically each school year.

Recent Research Results

The following is a summary of five guiding premises and associated project discoveries:

Premise 1. The early behavioral dispositions that children display in school precede their psychological and academic adjustment in this environment.
Although aggression and anxious-withdrawal are "known" risk factors for dysfunction,[4,5] they have rarely been prospectively investigated in school contexts from early childhood through adolescence or distinguished as antecedents of children's psychological and academic adjustment. Therefore, a continuing aim has been to examine the presence, co-occurrence, and stability of these dispositions, as well as the links between these tendencies and children's adjustment.

Exemplary discoveries

Our findings show that aggressive dispositions were moderately stable from kindergarten to grade 6 (e.g., $r = .56$), whereas anxious-withdrawn behaviour was not stable until grades 2 ($r = .36$) and 3 ($r = .51$).[6,7] Additional findings revealed that children disposed toward one or both of these dispositions could be classified into three distinct risk groups, including aggressive,

anxious-withdrawn, and both aggressive and anxious-withdrawn (comorbid).[8] Predictive analyses showed that aggressive children who exceeded a risk criterion in kindergarten exhibited *increases* in psychological and school maladjustment two years later.[9] Anxious-withdrawn dispositions predicted early and later increases in internalizing problems.[10] Overall, the findings corroborate the premise that aggression and anxious-withdrawal are risks for later psychological and school maladjustment.

Premise 2. The nature of the relationships that children form with classroom peers antecedes their psychological/ school adjustment.

Few have examined the adaptive significance of the multiple forms of relationships children participate in simultaneously in classrooms. We examined this premise by investigating the stability of children's classroom relationships, as well as concurrent and longitudinal links with psychological and school adjustment, and the extent to which different relationships were distinctly versus contingently predictive of specific forms of adjustment. Except for victimization, the types of relationships children formed in kindergarten remained moderately stable through grade 6 (e.g., peer acceptance, $r = .47$; peer rejection, $r = .37$; mutual friendships, $r = .30$).[7,9,10] From K to grade 1, peer rejection predicted lower psychological and school adjustment, whereas peer acceptance and friendship predicted better adjustment in both domains.[11] The premise that relationships differentially or contingently contribute to adjustment was examined by investigating links between participation in different types of peer relationships and changes in children's adjustment.[11,12] Victimization, for example, more than other relationships, forecasted decrements in emotional adjustment that were not predictable from other forms of relationships. Peer acceptance was uniquely linked with gains in children's class participation and achievement.[11]

It was further discovered that when examining longer intervals (ages 5 to 12), the consistency with which children experienced peer rejection was linked to their classroom engagement. The results indicated that children were more cooperative in classroom activities during periods when their classmates did not reject them, but they became significantly less cooperative during times when they faced rejection.[13]

Other findings have illuminated the connection between how rejected children are treated by their peers and their school engagement. A study examining school engagement from kindergarten to Grade 5 showed that peer rejection encountered in kindergarten predicted a decline in classroom participation and an increase in school avoidance by Grade 5.[14] Notably, the

type of peer maltreatment that children faced throughout their school years influenced these patterns. Specifically, chronic peer exclusion mediated the relationship between early peer rejection and later classroom participation, while chronic peer abuse primarily mediated the connection between early rejection and increased school avoidance.[14]

These findings, suggesting that peer victimization (e.g., exclusion, verbal, and physical abuse) mediates the link between peer rejection and children's school adjustment, led us to examine further the role of victimization in children's school adjustment, particularly in relation to their overall academic achievement. We achieved this by examining patterns of continuity and change in school-based victimization throughout formal schooling (Grades K-12) and determining whether specific temporal patterns of victimization (i.e., differential trajectories) were associated with children's academic performance.[15]

Although it was the norm for victimization prevalence and frequency to decline across formal schooling, five trajectory subtypes were identified, capturing differences in victimization frequency and continuity (i.e., high-chronic, moderate-emerging, early victims, low victims, and nonvictims). Consistent with a chronic stress hypothesis, high-chronic victimization consistently was related to lower—and often prolonged—disparities in school engagement, academic self-perceptions, and academic achievement. For other victimization subtypes, movement into victimization (i.e., moderate-emerging victims) was associated with lower or declining scores on academic indicators. In contrast, movement out of victimization (i.e., early victims who desisted) was associated with higher or increasing scores on these indicators, indicating "recovery."[15]

This evidence suggests that early and ongoing peer victimization, perhaps even more than peer rejection, is linked to early and lasting (i.e., long-term; accumulative) declines in school engagement and achievement. This may partly be because, unlike peer rejection (being disliked by classmates), peer victimization represents a more direct and potentially harmful form of peer relationship. It often manifests as exclusion, verbal abuse, or physical maltreatment, which may cause children to develop coping patterns that are contrary to school attendance (e.g., school avoidance, refusal) and reduced participation in classroom learning activities. Given this, it is perhaps not surprising that chronic victimization, which for some children begins in kindergarten and continues throughout their educational journey, may ultimately have a significant impact on their overall academic attainment.

Overall, our findings and those of other investigators corroborate the inference that school adjustment is influenced by the diverse experiences children encounter in different peer relationships, and that certain relationships have greater adaptive significance depending on the type of adjustment being examined.

Premise 3. There are predictable links between early behavioural dispositions and the types of relationships children form in classrooms.

To investigate this premise, we observed children's behaviour as they began school with unfamiliar peers, and assessed their emergent peer relationships over a two- to five-year period. It was hypothesized that aggressive dispositions would lead to the formation of adverse relationships, anxious-withdrawn dispositions to isolation, and prosocial dispositions to positive relationships. Results from kindergarten to grade 2 and grade 5 have shown that, compared to normative matched controls, children with aggressive dispositions were more likely to develop early-emerging and sustained peer rejection.[8,9,12] In contrast, those with anxious-withdrawn dispositions tended to remain friendless. Growth curve analyses over grades K-4 showed that anxious-withdrawn children became increasingly excluded from peer activities over time.[10] These findings corroborated the premise that aggressive and withdrawn dispositions antecede the onset and duration of children's relationship difficulties. Prosocial dispositions, as expected, foreshadowed positive relationship trajectories.

Premise 4. The contributions of children's classroom relationships to psychological and school adjustment are not entirely redundant with those attributable to their behavioural dispositions.

Two somewhat separate literatures have developed around premises 1 and 2 (i.e., later dysfunction is attributable either to "risky" behavioral dispositions or to participation in "problematic" relationships). For decades, many investigators have regarded the explanatory power of one of these two "main effects" perspectives as dominant over the other.[16] An aim for this project was to move beyond "main effects" perspectives by utilizing a child-by-environment model in which risk/protective factors are seen as originating within the child *and* the relational environment.

In two prospective longitudinal studies with kindergarten samples, we found that children whose interactions were more prosocial during the first 10 weeks of kindergarten tended to develop mutual friends and higher levels of peer acceptance by week 14.6 In contrast, children whose interactions were characterized by aggressive behaviour became more disliked by classmates

and had fewer friends. Direct paths were found between children's classroom relationships and participation, with the strongest of these emanating from negative relationship features (i.e., peer rejection), lending support to the hypothesis that such features impede subsequent adaptive classroom participation and achievement. It would appear that young children's use of force or coercive tactics is likely to subvert others' aims and interests, causing peers to develop adversarial reactions (e.g., rejection). Once formed, relationship adversity appears to impede children's classroom participation and achievement.

Additional investigations were conducted to explicate the possible functions of classroom peer relationships for aggressive children. Principal aims were to determine whether aggressive children's participation in different types of classroom relationships might increase (e.g., exacerbate) or decrease (i.e., compensate for) their probability of developing psychological and school dysfunction. One example of this line of work is a prospective longitudinal study in which we assessed not only children's aggressive dispositions but also relationship risks (i.e., classroom peer rejection and victimization) and protective factors (i.e., classroom peer acceptance and mutual friendships) over two years.[9] Children who manifested higher levels of aggression as they began kindergarten evidenced significant increases in maladjustment in later grades on nearly all of the investigated indices of psychological and school functioning. Further, corroboration was found for the premise that positive relationships buffer children from psychological and school maladjustment. After accounting for children's initial aggressive risk status, early peer acceptance predicted relative declines in attention problems and misconduct, as well as relative gains in cooperative participation and school liking. This evidence suggests that acceptance by classmates provides children with a sense of belonging and inclusion in peer activities, which decreases the likelihood that they will engage in resistant behavior patterns, form negative school attitudes, and disengage from school tasks.

Similar results were found for mental health outcomes (i.e., internalizing and externalizing problems) when children's early aggressive and withdrawn behavior patterns were examined alongside peer rejection across a longer interval of schooling (Grades K to 5, and K to 8). For children who exhibited an early propensity toward aggressive behavior, exposure to peer rejection across grades increased the likelihood that they would display externalizing symptoms, such as rule-breaking and conduct problems.[17,18] For children showing early signs of withdrawn behavior, experiencing peer rejection made it more likely that they would develop internalizing issues, such as anxiety and depression, starting in early childhood and increasing over time.[19]

Premise 5. In addition to behavioural risks, chronic rather than transient exposure to relational adversity (e.g., peer rejection, victimization), deprivation (e.g., friendlessness) or advantage (e.g., peer group acceptance) has greater consequences for children's psychological and school adjustment.

Few researchers have investigated whether children's future adjustment varies as a function of sustained versus transient participation in peer relationships, and no one has investigated whether a history of peer relationship difficulties shapes adjustment beyond the more immediate strains of contemporary peer relationships. To address these limitations, we investigated how enduring relational adversity (e.g., chronic rejection, victimization) and/or advantage (e.g., stable peer acceptance, friendships) interfaced with children's aggressive dispositions to influence their adjustment.[9] Variable-oriented analyses yielded findings consistent with an additive child-by-environment model: with few exceptions, participation in peer relationships predicted adjustment beyond children's aggressive risk status. Some evidence supported a moderated child-by-environment model, in that relational adversity or advantage appeared to exacerbate or compensate for dysfunctions linked with aggressive dispositions. Moreover, compared to early onset, the chronicity of children's aggressive risk status and history of exposure to relational stressors/supports bore a stronger association to changes in maladjustment. Person-oriented analyses comparing children who were aggressive but had different relational risk/support histories (ARR group: higher ratio of relational stressors to supports; ARS group: higher ratio of supports to stressors) and children who were not at risk (RF group: risk free) revealed that only the ARR group showed significant increases in psychological and school maladjustment trajectories across the early grades. Even more intriguing was the finding that children in the ARS group evidenced significant decrements in maladjustment over the same period. These findings corroborated the inference that a powerful behavioural risk (aggressiveness) can be exacerbated by chronic relational risks but buffered by stable relational supports, illustrating the importance of research on children's relationship histories.

Finally, Ladd and Troop[12] examined the contributions of aggressive and anxious behavioural dispositions *and* histories of peer relationship adversity and deprivation from early (K) to middle-childhood (grade 4). Estimation via SEM of hypothesized and alternative models showed that chronic friendlessness, rejection, and victimization were positively and directly linked with later forms of maladjustment. Because these paths were adjusted for children's behavioural dispositions and concurrent peer relationships, the results constitute a more stringent test of chronic relationship adversity models.

Conclusions

Our findings corroborate multiple theoretical positions. First, the direct link between children's early behavioural dispositions and later maladjustment is consistent with "child effects" models, in which it is argued that early-emerging behavioral dispositions directly contribute to later maladjustment. Second, a tenet of environmental perspectives is substantiated by evidence indicating that children's chronic peer relationship experiences, not just their dispositional characteristics, are directly linked with later maladjustment. However, in contrast to these "main effects" perspectives, it can be argued that our findings fit best within a child-by-environment model. Differences in children's peer relationships and particularly their histories of relationship adversity, deprivation or advantage—elements of their school and rearing environments—were found to: (a) contribute additively to the prediction of maladjustment, beyond that forecasted by behavioural dispositions, and (b) in several cases, mediate the link between early dispositions and later maladjustment.

Novel Inferences Corroborated by Project Findings

- Early behavioural dispositions antecede children's adjustment. These same behavioural dispositions are precursors of the relational ecology (i.e., the form/nature of relationships) that children develop in school.
- Although children's dispositions and peer relationships are significant antecedents of future adjustment, the predictive power of either factor alone is less than their additive or contingent contributions.
- Enduring relationship adversity (e.g., peer rejection), deprivation (e.g., friendlessness), or advantage (e.g., peer acceptance) are more closely associated with children's adjustment trajectories than are more transient or proximal experiences within these same relationship domains.
- Risky behavioural dispositions may be exacerbated by enduring relationship adversity (e.g., chronic victimization), and buffered by stable relationship advantage (e.g., stable peer group acceptance).

Implications for Policy and Service

Applications: Implications of Pathways Project Findings for Educators and Schools

The policy recommendations discussed here mainly rely on findings from kindergarten and early elementary years. However, as noted in this article, more evidence related to later grades and extended schooling has started to emerge, providing insights into potential long-term connections between early behavioral and relational indicators of school readiness and later academic success and adjustment.

How can we place children on trajectories that lead to successful (as opposed to unsuccessful) trajectories toward social, psychological, and scholastic competence? Our findings suggest that there may be a number of ways that parents, teachers, and school administrators can help children find successful pathways to health and well-being during the school years. The following service and policy recommendations are consistent with evidence obtained from the Pathways Project:

- Increase the probability that children will form *positive feelings/attitudes toward school* as they enter kindergarten. In our samples, 25 to 35% of children had mixed or negative attitudes toward school by the second month of kindergarten. Additionally, once children formed a negative impression of school, their attitudes often became substantially more negative as they progressed from one grade to the next. Thus, before children start school, it is important to establish effective communication with their families and preschool or childcare teachers that helps children develop realistic expectations about: (a) the purpose of school and (b) what they will be expected to do in kindergarten or grade 1. This includes both social tasks, such as making friends and building a relationship with the teacher, as well as academic tasks, like actively participating in classroom learning activities.
- As children enter kindergarten, family members and school personnel should pay attention to (and try to improve, if necessary) children's feelings toward school and the *quality of the relationships they form with classmates and teachers.* Our work suggests that, among young children, much of the "glue" that helps children identify with or become "attached" to the school environment is social rather than scholastic in nature. With respect to this, a pivotal "cycle" or chain of events are implied by our findings: (1) As children enter kindergarten, those who act cooperatively toward others and refrain from aggressive or antisocial acts develop more supportive classroom social relationships with peers and teachers. (2) Those children who do develop secure and supportive ties become more interested and involved in learning activities and are better able to cope with challenges in the classroom. (3) The engagement that seems to grow out of children's supportive peer

and teacher relationships promotes higher levels of learning and translates into greater gains in achievement over the school year. To help children profit from this cycle, it would be beneficial to institute relationship-formation activities early in the school year that would be designed to: (a) help children learn prosocial skills and refrain from aggressive/antisocial behaviours; (b) encourage every child to make at least one friend in their classroom, and (c) establish supportive interactions with their classroom peers and teachers.

- Enroll children in early childhood programs that help them develop social and relationship skills before they enter grade school. Children who already possess friendship-making skills and cooperative behaviours have an increased chance of forging supportive relationships at school that may help them succeed in kindergarten and the primary grades. Helping preschool children develop positive social behaviors and experiences in forming constructive peer relationships, such as friendships, through informal playdates or other home- or community-based activities may also be advisable.[20,21,22,23]
- Soon after children enter kindergarten, they should be encouraged to take an active and cooperative role in classroom activities. Our work suggests that young children must behave in a way that engages the learning environment to benefit from it. Children who avoid (“move away”) or resist (“move against”) the social or academic challenges of early schooling appear to be at high risk for school disengagement and underachievement. Both *active* participation in classroom activities (e.g., getting involved, showing initiative) and cooperation/compliance with the culture of the classroom (i.e., adhering to the social rules and role expectations of the classroom) are strong predictors of early achievement.
- Implement programs or activities that prevent children's exposure to significant stressors, such as "bully-free" classrooms and group activities where peers are not allowed to harass or reject others. Programs of this nature are strongly recommended because adverse peer experiences appear to have long-lasting negative social and psychological effects on children, often alienating them from schooling (e.g., leading to negative school attitudes, increasing school avoidance and absences, and limiting gains in achievement). For instance, many programs have been designed to address these problems in schools, including Positive Behavioral Interventions and Supports’ Bullying Prevention (BP-PBIS)[24], Second Step’s anti-bullying program (SS-SEL)[25], Olweus Bullying Prevention Program (OBPP)[26] and Salmivalli’s KiVa[27]. Such programs offer coaching methods for helping children develop social skills, cooperative group activities for promoting tolerance and peer

acceptance.

In conclusion, we hope that the findings from the Pathways Project will assist families and schools in anticipating children's needs as they enter school and progress through the elementary, middle-, and high-school years. By doing so, we will be better positioned to give children a strong start toward a quality education, allowing more children to gain the maximum benefits from their school experiences.

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School Readiness and the Transition to Kindergarten: Developmental Domains, Systemic Influences, and the Role of Context

[1]Lia Sandilos, PhD, [2]Sara Rimm-Kaufman, PhD

[1]Lehigh University, USA, [2]University of Virginia, USA

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Introduction

Children's transition to kindergarten and their skills at school entry forecast long-term academic success.[1,2] Given the importance of these early skills, school readiness has long been a priority for the United States education system. Over two decades ago, the primary objective of the National Education Goals Panel was "to ensure that all children enter school ready to learn."[3] Subsequently, the 2015 Every Student Succeeds Act (ESSA) further elevated the importance of school readiness by requiring states to document how pre-kindergarten programs support the development of early skills. This legislation contributed to substantial growth in investment, enrollment, and workforce development within the early childhood education system.[4] Although the COVID-19 pandemic disrupted pre-kindergarten enrollment in 2020—and schools and families continue to grapple with its effects years later[5,6]—momentum toward early education expansion has not stalled. Countries around the globe continue to invest in improving and expanding early childhood education, as evidenced by the 32% increase in worldwide pre-primary enrollment over the past 35 years.[7]

Subject

There is no single indicator of kindergarten readiness.[8] Readiness encompasses a range of skills and developmental domains. Presently, the U.S. Department of Education defines the "essential domains for readiness" as language and literacy development, cognition and general knowledge (e.g., early mathematics, early science), approaches to learning, physical well-being and motor development, and social-emotional development.[9]

Research suggests that children's school outcomes, especially achievement, are relatively stable after the first years of school.[10,11] Moreover, evidence shows that interventions tend to be more

successful during the early school years.[12,13] Consequently, researchers, policymakers, educators, and parents continue to grapple with what it means for children to be “ready” for school, seeking to ensure that children are exposed to essential experiences during these critical years.

This brief report summarizes practical considerations and research evidence on school transition and readiness, aiming to describe stakeholders’ definitions of readiness and highlight key readiness characteristics and social contexts that influence its development.

Practical Context

Children and their families experience discontinuity during the transition to kindergarten, even though nearly 60% of American children receive regular care from a non-parental caregiver before this transition.[14] Within the U.S., the shift toward academic priorities and the heightened rigor present challenges to children as they begin kindergarten.[15] Emphasis on accountability has forced a “push down curriculum” in which children are expected to perform at higher academic levels at earlier ages. Many kindergarten classrooms have increased teacher-directed math and literacy instruction, and spend less time engaging in free play or center-based activities.[16]

The transition to kindergarten has become an increasingly visible issue as federal and state governments consider the merits of federally-funded preschool programs. For example, U.S. kindergarten teachers reported on the readiness skills of nearly 700 students and results indicated that over 70% of children experienced challenges in at least one area during the transition to school. These teachers identified the most pressing needs as developing organizational skills, working effectively in groups, meeting academic expectations, and forming peer relationships.[17] Efforts to improve the kindergarten transition need to leverage home, school, neighborhood, and community resources to prepare children for school.[18] Some promising efforts include expanding access to high quality preschool programming,[19] increasing preschool-to-kindergarten transition activities,[20] and establishing stronger connections between home and school environments.[21] One challenge that exists is that even before kindergarten, children have been differentially impacted by social determinants of health and well-being that undergird readiness skills.[22,23]

Further, children entering kindergarten differ from those of a generation ago; they are increasingly diverse with regard to racial, ethnic, economic, and language backgrounds.[24] For example, among children and families enrolled in Head Start preschools, 29% identify as

Black/African American, 37% as Latino, and 34% speak a language other than English at home.[25] This growing diversity among children stands in contrast to the demographic makeup of the kindergarten teacher workforce, which remains predominantly White, female, monolingual, and middle class.[26] To bridge this potential cultural gap between teachers and students, promising approaches to support transition to kindergarten need to identify and leverage the full variation of family strengths.[27] Moreover, effective transition practices must acknowledge and respond to systemic influences—such as racial, economic, and immigration-related inequities—that shape the early learning environments of children entering kindergarten.[28]

Focusing on child skills and developmental domains is just one perspective on readiness. For at least three decades, early childhood stakeholders have recognized that "readiness" is not only an attribute of the child but also can be measured as the extent to which schools, communities, and society create opportunities for children to learn and thrive. This understanding shifts the question away from: "Are children ready for school?" toward, "Are schools ready for children?"[29] We can only answer this question by fully understanding the preschool, family and community contexts in which young children spend their time.[30]

Research Context

Three main bodies of research literature inform discussions about school readiness. The first body is based on research examining the views of stakeholders (e.g., early childhood teachers, parents) on their perceptions of school readiness. The second body of research examines definitions of school readiness by considering the relative importance of cognitive, social, and self-regulatory skills, as well as chronological age. The third examines school readiness in relation to early experiences—studying how classroom environments and family interactions influence child outcomes.

Key Research Questions

Key research questions include: How do teachers and parents define readiness? What are the cognitive, social, self-regulatory and chronological markers of school readiness? What are the child-care and home contexts associated with school readiness?

Research Results

What is Readiness: Teachers' and Parents' Definitions

Studies have examined the definition of readiness among different stakeholders in the kindergarten transition process. A recent meta-analysis of 27 international studies of teachers' perception of school readiness found that more early childhood teachers identified non-academic skills (e.g., ability to show empathy, wait in line, take care of personal bathroom needs) as indicators of readiness as compared to academic skills.[31] Similarly, another study found that preschool and kindergarten teachers placed greater emphasis on self-regulatory and interpersonal skills rather than academic competence.[32] Parents, in contrast, may be more likely to define readiness in terms of academic abilities, such as the ability to count, name objects, or identify letters.[33,34]

Readiness as Defined by Cognition, Self-regulation, Social Competence, and Chronological Age

Early signs of cognitive ability and maturity link to children's performance in school.[35] For this reason, this approach to assessing readiness has been used as an indication that a child is prepared for the school environment.[36] One seminal meta-analytic study found that preschool and kindergarten cognitive assessments predicted, on average, 25% of variance in early elementary school cognitive assessments.[37] These findings suggest that cognitive indicators are important but other factors also account for the majority of variation in early school outcomes.

Accumulated evidence points to the significant role of self-regulation and executive functioning.[38-40] These features have a neurobiological basis and provide the foundation for many of the behaviors and skills required in kindergarten.[41-43] Ability to attend selectively, show appropriate social responses, and stay engaged in academic tasks are all implicated as factors that contribute to and define school readiness. Relatedly, children's "approaches to learning," which include emotion-regulation, attention, persistence, and attitude, support their ability to take advantage of learning opportunities in the classroom and predict achievement in later elementary grades.[44-46]

Other research links children's social competence to academic performance. For example, children's early social-emotional skills and social adjustment (e.g., relationships with peers and teachers, emotion knowledge, and prosocial behaviors) are associated with academic outcomes and classroom engagement in kindergarten.[47,48] Conversely, problem behaviors, such as aggression or withdrawal, interfere with classroom learning.[49]

Children's age is also a marker of school readiness insofar as it indicates maturity in the cognitive, social, and self-regulatory domains. However, research on the effect of age is mixed.

Some studies suggest that while there is some advantage to being slightly older upon the transition to kindergarten, the effects on academic and social-behavioral skills appear to diminish over time.[50,51] Other work finds that an earlier state-wide entry cutoff for kindergarten (resulting in older kindergartners, on average) linked to higher state test scores in 4th and 8th grade.[52]

Social Contexts for Readiness

Attributes of children's child-care environment contribute to their transition and adjustment to school. In early childhood classrooms, stimulating and supportive teacher-child interactions characterized by high closeness and low conflict can enhance students' social-emotional and academic competence.[53-55] Quality preschool or child-care also predicts ease of kindergarten adjustment, strengthens social and self-regulatory skills,[56,57] and reduces the likelihood of some negative outcomes, such as grade retention.[58] Greater educator training in child development and use of evidence-based curricula emphasizing both academic and social-emotional growth are features of preschool settings linked to stronger readiness outcomes.[59] Further, research shows that children who face early adversity, such as growing up in low income or impoverished homes, may have the most to gain from high quality early classroom experiences.[60,61]

Family processes also influence children's competencies as they enter school. Quality of parent-child relationships, including parental sensitivity and stimulation, contribute to early school success.[62-65] Parents' behaviors toward their children and the stimulating materials and consistent routines they provide in the home environment are associated with children's adjustment to the first months and years of school.[66,67] Moreover, family involvement with school, such as participating in school activities and attending teacher conferences, relates to early gains in achievement.[68,69]

Conclusion

The evidence suggests that school readiness is a critical factor for predicting children's school success and that the characterizations of school readiness are multi-dimensional. While parents often highlight foundational academic skills, teachers tend to prioritize social-emotional and self-regulatory competencies as essential for a smooth transition to school. Research shows that cognitive skills, social competence, and self-regulation provide a foundation for academic success and that chronological age, alone, is an insufficient indicator of school readiness.

Moreover, early indicators of school success often reflect the influence of supportive and stimulating family environments, along with access to high-quality early childhood education.

Implications

Programs designed to prepare children for kindergarten should strive to boost students' self-regulation, social competence, and cognitive skills. Families and early childhood educators are central to this process, serving as key contributors to children's readiness. For practitioners, it is essential to recognize the multidimensional nature of school readiness, and the importance of high-quality teacher-child relationships characterized by high closeness and low conflict. Effective transition practices can help bridge the expectations of families and schools, creating greater alignment as children enter kindergarten.[70] However, families and schools cannot do this alone. State efforts that establish standards and provide curricular frameworks can support systemic change. The California Preschool/Transitional Kindergarten Learning Foundations is one valuable example of state-level guidance on school readiness skills and effective transition practices.[71]

It is important to recognize that children do not all begin their educational journeys from the same starting point. Disparities in access to early learning experiences, which are often shaped by structural inequities, can lead to differences in readiness skills that reflect broader patterns of economic and social inequality. To ensure all children have the opportunity to thrive as they enter school, targeted investments in kindergarten transition practices and strong home-school partnerships are especially vital for youth from underserved communities.[72]

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Services and Programs that Influence Young Children's School Transitions

[1]Meghan McDoniel, PhD, MEd, [2]Diane Early, PhD

[1]Child Trends, USA, [2]FPG Child Development Institute, University of North Carolina at Chapel Hill, USA

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Introduction and Subject

Legislators, policy-makers and educators are increasingly focused on school readiness as a key to improving school outcomes for all children. School readiness includes both children's academic and social skills as they enter school and "ready schools," meaning the school's preparedness to serve all children. This emphasis on ready schools naturally focuses attention on the services and programs implemented by schools or teachers that influence young children's school transitions. Love, Logue, Trudeau and Thayer[1] argue that key ingredients to a successful transition are "activities and events (over and above the preschool and school programs) that are designed to overcome the discontinuities that may disrupt children's learning and development" (p. 9). Although high-quality experiences prior to the beginning of school and a high-quality elementary education program are critical to child success, some attention must also be given to the discontinuities between settings.

Research Context

Ready schools, according to Pianta, Cox, Taylor and Early[2], have three characteristics: 1) they reach out, linking families, preschool settings and communities with schools; 2) they reach backward in time, making connections before the first day of school; and 3) they reach with appropriate intensity. Based on this theoretical approach, a rapport should be established among the child, the kindergarten teacher, the pre-kindergarten teacher, peers and the parent *before* the child enters kindergarten. Establishing this positive system of relationships among these social contexts is critical for successful transitions.[3,4] Relationships serve as resources for children as they enter school by allowing for clear communication, providing a sense of familiarity during the transition and facilitating social competencies.

Problems and Key Research Questions

The key research questions in the area of school transitions fall into three main categories: 1) what types of services and programs are most effective for aiding children as they make this transition? 2) what types of services and programs are currently in use? and 3) how can more effective services and programs become the norm? While there is a stronger research base from which to address the second and third key research issues, we have more recent work that addresses the first key research issue.

Research Results

Previous research provided information about what practices teachers use to improve school transitions, obstacles teachers face in implementing more effective practices and possible points of intervention for increasing the use of more effective practices. Pianta et al., using a comprehensive survey representative of U.S. kindergarten teachers, found that whereas almost all teachers reported some practices aimed at facilitating children's transitions into kindergarten, practices that would be most effective, according to the theoretical base – those that reach out, backward in time and with appropriate intensity – are relatively rare. Group-oriented practices occurring after the beginning of the school year (e.g., open houses) were the most common, while practices that involve one-to-one contact with children and families and those occurring prior to the first day of school were rare. Additionally, Pianta et al. found that in urban schools and in areas with more poverty and/or a higher concentration of minority students, individualized practices prior to the beginning of the school year were even less prevalent.

In the last two decades, the field has focused on the link between transition practices and children's experiences and outcomes in kindergarten and beyond. Using a nationally representative sample of kindergarten children in the United States, Cook and Coley[5] found that the number and type of transition practices related to children's functioning during the kindergarten year. Most teachers in this sample reported providing information to parents, offering parent orientations, or having children and parents visit their classrooms. Similar to Pianta et al.'s findings, few teachers engaged in one-on-one contact with children or their families. The overall number of transition practices teachers engaged in was positively linked to greater prosocial skills in children, while providing parent orientations was related to children's increased math and reading skills.

Several obstacles to the use of more effective transition practices have been reported. The most common barriers cited by teachers to implementing additional transition practices were the

strain of large class sizes, class lists that are generated too late, practices involving summer work that is not supported by salary, lack of a transition plan in the district, and challenges connecting kindergarten teachers with early childhood educators[6,7] When teachers are faced with these obstacles, Early et al. found that optimal transition practices, particularly those that occur before school begins, are challenging to implement. Transition activities before the beginning of the school year require more preparation on the part of the teacher and school (e.g., class lists must be generated, children's and families' phone numbers/addresses must be known) and require either additional funds for teacher pay or unpaid time donated by teachers. Similarly, practices involving individualized interaction with a child or family require more time and planning than practices involving the entire class simultaneously. This is congruent with the finding that teachers with large class sizes were less likely to use transition practices before school began, probably because of the burden associated with large class sizes. Lastly, communication and coordination with preschool settings (a practice that would sustain on-going relationships and lessen discontinuities) are challenging because they require knowledge of the incoming class and their preschool settings, time and willingness on the part of the preschool programs, and coordination with many different programs.

Strikingly, Early and colleagues found the largest between-group differences in use of transition practices were between teachers who had and had not received training in transitions. Teachers with such training were more likely to use all types of transition practices, apparently seeing some value in approaching transitions from a variety of angles. They started before the beginning of the school year, creating a longer transition period. They made efforts to use individualized practices, as well as group-oriented events. They involved the child's preschool setting – using the information provided by that setting and coordinating curricula and goals with that setting. Few teachers have such training, but these data indicate that it may be valuable in encouraging more comprehensive transition practices.

Conclusions

How children adapt to their earliest school experiences has long-term implications for cognitive and social development and for dropping out of high school.[8,9,10,11] With this in mind, attention is appropriately focused on optimizing children's transitions to school.

Optimal transitions to school are best supported by practices that are individualized and engage the child, family and preschool setting prior to the first day of school. Practices that establish

and foster relationships among important individuals in the child's life, such as providing several opportunities for families to connect with kindergarten teachers and classrooms, as well as connecting with parents specifically, are likely to reap the most benefit for the child.

Unfortunately, current research on the status of school transition practices shows that these optimal transition strategies are not widely practiced. High-intensity practices are the most time-consuming and least likely to be used by early elementary teachers. Administrative and structural barriers, such as low teacher pay, large class sizes and poor district coordination, suggest that schools may not be "ready" for kindergarteners. Encouragingly, teachers who have training in transitions are more likely to use all types of transition.

Implications

Current research points to several avenues for improving transitions for young children. First, schools need to focus on systematic transition planning for children. Plans need to be coordinated, flexible, individualized and pay particular attention to helping children and families form relationships with schools and peers.

Second, schools and communities need to focus on issues of timing to ensure that the transition process begins well before the first day of school. This ensures that there is sufficient time for key relationships to form and that there is continuity between the home or preschool environments and the school. System-level changes, such as paying for teachers to work during the summer, generating class lists early, smaller class sizes and holding events at school prior to the first day of class, can help to create a transition process rather than a transition event.

Last, there is evidence that teacher training in transition practices leads to increased use of transition practices of all types. Thus, providing pre-service and in-service training in this area may help teachers create plans for children and families that aid in helping children succeed during this transition.

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Transitions Begin Early

John M. Love, PhD, Helen H. Raikes, PhD

Mathematica Policy Research, USA, The Gallup Organization/University of Nebraska-Lincoln, USA[a]

June 2009, 2e éd.

Introduction

It is common for policy-makers to think of preschool-to-school transitions as the experiences children have between the end of their preschool or pre-kindergarten year and entrance into kindergarten. However, evidence is accumulating that interventions earlier in life (in the first three years) contribute to enhanced development in ways that are consistent with improving children's chances for a successful transition. In addition to the specific *services* supporting continuity that Early,[1] Pianta et al.,[2] and others[3] have described, children need the benefits of quality early childhood *programs*.

Subject

In this paper, we first describe the developmental qualities that are important for a successful transition to school, and then show how quality infant-toddler programs contribute to those features of children's early development and learning.

Research Context

What is important for successful preschool-to-school transitions?

When the National Education Goals Panel defined the first education goal in the United States, the Goal One Technical Planning Group broke new ground by defining not only what the important dimensions of "readiness" are, but also what conditions are critical for supporting those dimensions.[4] The five dimensions of early development and learning (physical and motor development, social and emotional development, approaches toward learning, language, and cognition and general knowledge) have become widely accepted, in one form or another. The three supporting conditions identified include having access to quality preschool programs, parents as children's first teachers, and appropriate nutrition and health care. Good-quality

infant-toddler programs have been shown to be effective in changing the environments babies experience in the early years in ways consistent with these supporting conditions, enhancing children's development.

Recent Research Results

What do effective infant-toddler programs contribute?

Between 1972 and 1977, the Carolina Abecedarian Project enrolled 120 “high-risk” African-American families in four cohorts. From these, 111 children were randomly assigned to the program, which included full-time child care beginning in the first three months of life, or to a control group. Families and children continued receiving services until the children reached the age of five. The program, which also provided social supports for families, was highly successful in improving children’s cognitive development relative to the control group, with significant differences at 18, 24 and 36 months of age.[5,6] Follow-up studies showed that program effects persisted at every assessment point through 16 to 20 years of age.

The Infant Health and Development Program (IHDP) combined home visiting, centre-based education and family services to low-birthweight premature infants and their families during the first three years of life. At age three, the program group scored significantly higher on the Stanford Binet test of intelligence and lower in behaviour problems. The heavier low-birthweight infants benefited more at ages two and three than did the very low-birthweight children.[7] Effects were sustained through age eight for the heavier low-birthweight children.[8]

The Comprehensive Child Development Program (CCDP) was implemented as a demonstration program in 24 highly diverse sites in 1989 and 1990. Programs featured intensive social services and parent education, although direct child development services and program-sponsored child care were far less intensive than in the IHDP and Abecedarian programs. When children were two years old, the national evaluation found that CCDPs significantly improved (1) mothers’ parenting skills and attitudes; (2) parents’ economic self-sufficiency; and (3) children’s cognitive development. However, these effects largely disappeared by age three and were absent at age five.[9]

The national evaluation of the federal Early Head Start program[10] found that this two-generation intervention benefited two- and three-year-old children (when contrasted with their randomly

assigned control group) along a number of important dimensions: cognitive development, vocabulary and social behaviour (reduced aggressive behaviour problems, increased engagement of parents and higher sustained attention with objects in a play situation). The program also made important changes in the children's environments or the conditions supporting development. These included changing parenting practices so that Early Head Start parents provided more supports for learning and literacy in their home environments and were more likely to read to their children every day.

The Early Head Start intervention also improved children's environments by increasing access to good-quality child care.[11] By ages 14 and 24 months, for example, Early Head Start children were almost three times as likely to be in *good-quality* centre child care as their control-group counterparts. Program children were also 50% more likely to be in good-quality centre settings at 36 months.

Conclusions

Do children from good infant-toddler programs have a head start?

Unfortunately, there is not a great deal of evidence that these positive effects from infant-toddler programs will translate into greater success when the children reach school age. The Abecedarian and IHDP results suggest this outcome, but were implemented only within two special populations (African-American children and low-birthweight babies, respectively). However, the Early Head Start evaluation demonstrated significant impacts across the full range of developmental domains thought to be important for success in school according to the National Education Goals Panel.[4] If children's experiences upon leaving Early Head Start, between ages three and five, maintain Early Head Start's benefits, these children will indeed be shown to have an early "head start" toward a successful transition to school.

Implications

Parents, teachers, program managers and policy-makers need to think about the transition process beginning in the first years of life in order to build the foundations for future success in school. Further research is needed to understand this process in more detail.

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Note:

[a] Raikes was Society for Research in Child Development Fellow, Administration for Children and Families, U.S. Department of Health and Human Services, during the Early Head Start Research and Evaluation Project.

Role of Early Childhood Education (ECE) Programs in Assisting Children With Successful Transitions to School

Gary Resnick, PhD

Independent Research and Evaluation Consultant, Oakland, CA, USA

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Introduction

The transition between early childhood and formal schooling, beginning in kindergarten, is widely considered a crucial period in children's development. When children transition from an Early Childhood Education (ECE) program into kindergarten programs operated by local schools, young children and their families become caught between two distinct educational systems, each with differing and often contradictory governance structures, philosophies, and performance measurement requirements. Successful transitions require continuity between the early childhood systems children are leaving, and the more formal school systems children are entering.[1] Research has demonstrated that aligned high-quality practices between ECE and kindergarten may maximize early education effects.[2] However, the empirical literature studying effective transition practices document relatively small effect sizes and few statistically significant relationships.[1] Little is known about the strategies that are related to positive short- and longer-term child academic outcomes, or any benefits for teachers or families. With the lack of strong results from studies of transition practices on children's development, high-quality ECE programs may offer important supports for young children and their families in the transition to kindergarten.

Subject

Worldwide, an increasing number of children are attending child care already from an early age.[3] In the United States, ECE consists of paid, non-parental care for children from birth through age five (who are not yet in kindergarten) attending either centre- or family-based care. Almost 60 percent of three- to five-year-olds attended centre-based ECE programs in 2019,[4] operated by Head Start, state pre-K or local community groups. The percentages of children participating in any centre-based care arrangement stayed relatively the same from 2012 to 2019. The remaining

40 percent were either in home-based child care arrangements with relatives or other non-parental care providers or only in parental care. In 2012, almost a million (919,000) unlisted paid family child care or home-based providers regularly cared for over 2.3 million children ages birth through age five for an average of four children per week.[5]

Problems

School readiness is multifaceted, comprised of children being developmentally ready, schools being ready for children to learn,[6] and family and community supports being in place to assist children's success in school. For example, most states now have early learning standards that incorporate five or more content areas, including physical and motor development, language and literacy, cognitive development, socioemotional development, and approaches to learning.[7] The current Head Start Child Development and Early Learning Framework explicitly required programs to implement comprehensive curricula that addressed all of the 11 domains within their framework of school readiness outcomes.[8]

Schools must also be ready for children to learn and some families with children showing early conduct problems may need additional supports. Unfortunately, children in prekindergarten have been expelled at rates more than three times higher than those in K–12, with over 17,000 preschoolers permanently removed in 2018.[9] Boys, Black, Latine, and Native American children are disproportionately affected.[10,11] However, despite reductions in formal exclusionary discipline (e.g., suspensions, expulsions) due to state and local reforms,[12] there is a growing body of evidence describing informal exclusionary discipline practices that mirror formal discipline but remain largely undocumented.[13] Informal exclusionary discipline practices can occur within classrooms or schools, or even outside of schools. These practices serve to continue gender and racial disparities and limit access to quality early learning environments.

Research Context

Rigorous evaluations of ECE programs often use longitudinal studies that follow children from early years into elementary school. Four tiers of evidence were distinguished by the What Works Clearinghouse (WWC). Studies yielding strong evidence, the highest tier, need to be based on at least one well-designed, well-implemented experimental study with large, multi-site samples demonstrating statistically significant and positive effects.[14] The strongest evidence comes from the randomized control trial (RCT) design, which randomly assigns children, classrooms, or

centres to intervention or control groups. Random assignment controls for important selection biases and thereby eliminates pre-existing differences when program participation is left wholly up to parents or program administrators. Outcomes are measured through standardized assessments of school readiness before entry, at program completion, and at later follow-up points, including kindergarten and first-grade entries.

When RCTs are not feasible, several alternative designs are considered nearly equivalent. For example, the study of the Oklahoma universal pre-K program used a regression discontinuity design that relied on a strict birthday eligibility criterion.[15] Some sophisticated designs use cluster-randomized designs with the preschool centre serving as the unit of analysis, for example, in a study of preschool curricula.[7] To test for the effects of local or state policies, fixed effects tests are conducted, such as the evaluation of the North Carolina early childhood programs in which fixed effects were tested to estimate the impact of state funding allocations on ECE programs.[16] Quasi-experimental designs use propensity-score matching or weighting methods to ensure equivalency between the intervention and comparison groups.[17] Analyses should control for the effects of clustering when children are nested within classrooms and classrooms within centres, using either multi-level modeling or robust variance estimation (RVE). Finally, advances in meta-analyses of existing intervention studies provide better control for effect size dependencies when there are multiple effects reported for each study while also assessing selective reporting and publication bias.[18]

Key Research Questions

The central question is whether ECE programs prepare children for kindergarten. For children from low-income or marginalized families, early childhood education programs are expected to have a compensatory effect so that their level of skills at the time they enter kindergarten are closer to their middle-class peers. Additional questions focus on how program quality influences children’s outcomes, the factors that shape ECE quality including the well-being and professional development of the ECE workforce, and the role of curricula.

Recent Research Results

Evidence consistently shows that ECE programs improve school readiness, with the strongest impacts for children from low-income families and Dual Language Learners (DLLs).[19] The Head Start Impact Study (HSIS),[20] found strong effects of Head Start at the end of the first Head Start

year, but, by the first grade, gains were largely absent, partly due to study design limitations in which a true randomized control sample occurred only in the first study year.[21]

High-quality, intensive, centre-based programs using published, evidence-based curricula demonstrate the strongest and most consistent effects, often extending through adolescence into adulthood.[15,16,22,23] However, evidence for the effectiveness of specific curricula is limited.[24] Studies have shown high levels of variation in how these curricula were implemented.[25] In the Preschool Curriculum Evaluation Research Consortium (PCERC), fifteen preschool curricula or combinations of curricula were evaluated in twelve randomized control trial studies. Only three curricula revealed positive effects at the end of preschool on literacy- or math-related skills relative to comparison curricula: Research-Based, Developmentally Informed (REDI) curriculum, [26] the Promoting Alternative Thinking Strategies (PATHS) curriculum,[27] and Teaching Early Literacy and Language curriculum for children with speech or language problems.[28] As well, the Evidence-based Program for Integrated Curricula for Head Start classrooms reported improved listening comprehension and mathematics compared to a business as usual (BAU) control.[29] Finally, a cluster-randomized study of an integrated literacy- and math-focused preschool curriculum found that the addition of an explicit socioemotional lesson component did not produce added social-emotional outcomes, despite positive impacts of the curricula on language and math outcomes.[7]

In general, starting ECE earlier, including infancy, may help children enter school on par with their peers. A strong evaluation of the high-quality Educare program demonstrated that children who enter Educare at younger ages have higher levels of receptive vocabulary skills at kindergarten entry than children who started Educare later.[30,31]

Classroom quality contributes modestly to outcomes, with meta-analyses from a large number of studies showing small but consistent associations of process quality measures with children’s outcomes. Meta-analyses have empirically documented small associations of both the ECERS[32] and CLASS[33] measures with children’s developmental outcomes that were consistent across quality regions (thresholds), exposures (dosage), child subgroups, and outcome domains.[34,35,36,37,38] In a 2022 special issue of the Early Childhood Research Quarterly (ECRQ) on the measurement of quality, the editors noted that none of the articles included in this issue found a strong or consistent association between CLASS ratings and child outcomes. Research may be shifting toward the greater use of "third-generation” quality measures.[39]

Finally, greater attention is being paid to the well-being of the ECE Workforce, due to their critical contribution towards quality of care, and children's development. Research has identified factors such as mental health, job stress and work demands that may hinder the workforce from effectively supporting children's healthy development.[40,41,42,43] State-based ECE Workforce Registries can be important research tools. As of 2022, these registries existed in 44 states and, as data quality and database management improve, they can be valuable for secondary data analyses to answer key policy and practice questions.[44]

Research Gaps

The high levels of variability in preschool quality, curriculum implementation, and effectiveness may hamper ECE program improvement.[45] Research has shown that the quality of program implementation can be highly variable and poor implementation can often explain the lack of program effects in evaluations of educational interventions.[46] These variations reflect the discrepancy between what was intended and what was delivered. Stakeholders remain concerned about the fadeout effects.[47] Modest correlations between quality and outcomes highlight the need for stronger measures of classroom quality.[39] Some non-process quality domains also need to be better operationalized and measured, for example, community supports of ECE providers.

Conclusions

In general, there is sufficient evidence from strong research studies to suggest that early childhood education can assist children to enter school ready to learn. ECE appears most beneficial to several key child sub-populations; children from low-income families and children who are Dual Language Learners (DLLs). Strong programs feature qualified teachers, evidence-based curricula, and full-day schedules. Benefits are greatest when children enroll at younger ages and remain in programs longer. Finally, while there is increased professionalism among the ECE workforce with defined qualifications and professional development opportunities, salaries have severely lagged and barely provide a living wage.[48]

Implications for Parents, Services and Policy

It has been argued that the current ECE landscape does not consistently align with evidence-based, best practices from current intervention research.[49] For example, ECE policies need to consider the socioeconomic gaps that serve as the contexts for development, at the family and

community levels. To improve quality, many states have adopted Quality Rating and Improvement Systems (QRIS). By 2016, 39 states used QRIS to link quality levels to subsidies and other support,[50] and thus have emerged as important policy levers to improve ECE quality. Additionally, policy and practice efforts should focus not only on the year before kindergarten but also on birth through age three.[49] Expanding access to high-quality infant-toddler programs[51] is critical to ensure all children benefit from early learning opportunities. Finally, greater attention is now being paid to the well-being of the ECE Workforce, such as teachers and administrators, due to their critical contribution towards quality classrooms and young children's healthy development. Recent research demonstrates the factors that influence the mental and physical health,[40,41] and financial well-being of ECE professionals.[42] More research is needed to test the effects of supportive interventions and policies for staff and administrators of ECE programs.

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The Role of Schools and Communities in Children's School Transition

Lysa Dealtry, PhD, Sue Dockett, PhD, Bob Perry, PhD

School of Education, Charles Sturt University, Australia

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Introduction

The transition to school is recognized as a focal point of children's future school engagement and educational outcomes.[1,2] Children who start school positively are well positioned to build a sense of belonging that promotes engagement in the educational environment.[3]

In many discussions of starting school, the terms 'transition' and 'readiness' are used interchangeably. While some renderings of readiness incorporate child, family, school, and community elements,[4,5] often the major focus is the academic readiness of individual children[6,7] or, sometimes, groups of children.[8,9] In contrast, a focus on transition directs our attention to the processes of continuity and change that characterize children's school start. While a great deal of the research focus on educational transitions is directed towards children's changing role, identity and status,[10] studies of transition also incorporate focus on what happens within children's social and cultural contexts – notably the family,[11] school, and community.[5,12]

Subject

Starting school is a key transition point for individuals.[13] The first day of school is often marked by special events and rites that hold both individual and social significance. For example, in some German states, school starters are presented with a Schultüte – a cone filled with sweets and school supplies – before engaging in celebrations with families. In Australia, children don their school uniform and multiple photographs are taken. These events mark both the importance of starting school for the individual, and provide social and cultural recognition that starting school is an important life event.

However, the first day of school is neither the beginning nor the end of the transition to school process, and it is not only the individual that contributes to the effectiveness of transition experiences. Transition occurs over an extended time frame, incorporating a range of

experiences involving the child, family, community and educational settings.[14]

Research indicates the importance of school factors. Increasingly, schools are expected to be ready for children[2], recognizing that "'lack of readiness' is not a problem of children being insufficiently skilled to learn at school, but instead it is where there is a mismatch between the attributes of individual children and families, and the ability and resources of the school and/or system to engage and respond appropriately".[8]

In addition to school factors, the importance of the community in supporting learning and promoting children's preparedness for school has been established.[15,16,17] This paper emphasizes the importance of school and community contexts, as well as their impact on the transition to school.

Problems

There are many ways to conceptualize the transition to school. For example, transition can be described as the movement of individual children from prior-to-school or home to school settings; as a rite of passage marked by specific events; and as a range of processes.[18]

An international group of scholars defined transition to school as a time of "individual and social change, influenced by communities and contexts and, within these, the relationships, identities, agency and power of all involved".[19] To reframe discussions about starting school towards a focus on transition, the group developed the Transition to School: Position Statement,[20] which characterizes transitions as times of opportunities, expectations, aspirations and entitlements. One of the key features of the Position Statement is that it recognizes the many participants in transition and urges consideration of the four constructs not only for the children starting school, but also for the families, communities, schools and school systems that contribute to transition experiences.

The move to reframe starting school as a time of transition recognizes several research problems:

1. Who is involved in the transition to school?
2. What strengths do they bring to transition processes?
3. How do stakeholders define effective transitions?

4. What strategies facilitate effective transitions?
5. What are the roles of schools and communities in promoting effective transitions?

Research Context

Recent worldwide attention has been directed to the importance of the early years.[21] The attention to early childhood education has extended to the early years of school and to the nature of the transition between early childhood and school education[2]. The development of new curricula for early childhood education and school education in many countries has contributed to the focus on transition to school.

There is increasing pressure to recognize the global implications of education and to establish educational programs that guarantee the development of a highly trained workforce.[22] Early childhood education faces this same pressure, often in the guise of academic curriculum that is "pushed down" from primary schools, and in increasing pressure from schools and schools systems to ensure that children entering school are prepared, particularly for the academic demands of school.[23]

Consequences of this context include:

1. pressure for prior-to-school services to implement a stronger academic curriculum and become more "school-like";
2. pressure for families to prepare their children for school with specific experiences; and
3. deficit views of communities, families and children who do not provide or engage in these experiences.

Key Research Questions

- What are the roles of schools and communities in facilitating transition?
- How can transition experiences promote opportunities, expectations, aspirations and entitlements for all involved?
- What is the potential to support continuity of learning across prior-to-school, home and school environments?

Recent Research Results

Recent research, policy and program initiatives have sought to address these issues.[2,3]

What are the roles of schools and communities in facilitating transition?

The essence of effective transition practices is commitment to building secure, respectful and reciprocal relationships among those involved. It is from these relationships – between and among children, families, communities, educators and educational settings – that continuity between community, home, prior-to-school and school is built.
Strong relationships support effective transitions[7]. When strong relationships exist between schools, prior-to-school settings and communities, each context is regarded as a valuable resource. Relationships are key mediators of children's competencies.[24] Relationships provide resources for children and families as they enter new and different contexts and confront different expectations and experiences[25].

It is not only children's relationships that are central to effective transitions. Relationships between schools and prior-to-school settings, among service-providers within communities, between families and schools and among families themselves all play an important role in constructing a context based on collaboration. It is this sense of collaboration, of working together, that is the key for facilitating effective transitions.[3]

Schools have a key role in establishing and maintaining these relationships. What happens at school largely determines children's success, both during the transition and in later school outcomes and far outweighs factors such as the age at which children start school and their assessed readiness.[26]

When schools make efforts to reach out to families and communities and build connections across services and agencies, they are rewarded with high levels of engagement and family connection with school.[27,28,29] This is particularly so when school and prior-to-school services collaborate and where relationships that are established before children start school continue into the new school environment.[30]

Schools exist within communities. The relationships between schools and communities influence children's transitions to school and their ongoing connections with school.[3] Communities with high levels of social capital,[31] provide both structural and social support for families and children at times of transition. These can include services such as out-of-school-hours care, and social networks that provide information about school and educational expectations. Social capital is

generated by the web of connections and interconnections present within communities and the trust and shared values that underpin these.

Bioecological theory[12] emphasizes the importance of inter-related contexts in supporting children's development and learning. Communities differ in many ways, including the availability and accessibility of resources and the opportunities afforded for interactions that affirm community values, aspirations and expectations. There is a well-established link between the local community context and children's development and learning,[32,33,34] largely linked to the availability of opportunities to engage in a range of experiences.[15]

When positive relationships are built between families, schools, prior-to-school settings and other community groups, there is the potential for collaboration and, through this, information sharing, the establishment of networks, and growing awareness of different contexts and resources.[35] These, in turn, can lead to everyone working towards common goals.

How can transition experiences promote opportunities, expectations, aspirations and entitlements?

Utilizing the Position Statement, educators are encouraged to reflect on transition practices from a range of perspectives. For example:

How do transition strategies and experiences provide opportunities for:

- Children to continue shaping their identities and to extend their existing knowledge, skills and understandings through interactions with adults, peers and family?
- Educators to share their own expertise, while recognizing the expertise of others, as they communicate and make connections with children, other educators, families and communities?
- Families to strengthen and support each child's learning and development?
- Communities to recognize starting school as a significant life event in the lives of children and their families?

In what ways do transition approaches recognize:

- Children's aspirations for friendships and a sense of belonging at school?

- Family hopes for positive educational outcomes for their children?
- Educators' aspirations for professional partnerships and support to create strong learning environments for all children?
- The aspirational importance of education within communities?

How do transition approaches respect the expectations of:

- Children to learn, face challenges and have access to support?
- Families to have their knowledge recognized and valued?
- Educators to access appropriate support and professional recognition?
- Communities to attend to the wellbeing of all children and the promotion of active citizenship?

How do transition approaches reflect entitlements of:

- All children to access high quality educational environments?
- Equity and excellence in all interactions with children, families, educators and communities?
- Professional recognition for educators – across prior-to-school and school sectors?
- Communities to be engaged as contributors to educational environments?

What is the potential to support continuity of learning across prior-to-school, home and school environments?

Transition is a time of both continuity and change. A great deal of focus is directed towards the changes – or discontinuities – encountered during the transition; changes such as the environment (physical and educational), pedagogy and curriculum, expectations, rules and routines.[36,37] However, it is also important to note that not everything changes at times of transition – elements of continuity remain. For example, family contexts continue to support children, many relationships are retained, community resources or supports may continue to be accessed, and children's learning journeys continue.

Pedagogical approaches in schools and prior-to-school settings can promote, or inhibit, continuity of learning for children.[2,37] Continuity of learning, pedagogy and curriculum is

facilitated by positive relationships and interactions. An integral part of this is cross-sectoral communication, where educators in early childhood and school settings communicate regularly to support the sharing of information.[2,38] While there may be many challenges to such communication – including a lack of awareness of the role of educators in 'other' settings,[35,37] and different expectations about transition experiences,[39]– where such communication exists it provides a powerful basis for continuity.[3]

Research Gaps

Much of the evidence invoked in discussions of school and community roles in supporting the transition to school remains anecdotal or derived from small-scale, locally relevant research. It is important that this research base not be dismissed, as many of the decisions and influences relevant to successful transitions are drawn from individual beliefs, experiences and expectations [40], as well as locally relevant and constructed understanding of school and who succeeds in school.[2,41] However, it is also important that such studies are complemented by larger-scale, longer-term, generalizable studies.

Many studies of the influence of school and communities on the transition to school have been undertaken in urban areas, and have focused on children's primary or secondary school experiences. Fewer studies have explored more diverse contexts – such as schools and communities in rural, regional or remote areas, or involving younger children and their transitions experiences.

World events, including changing immigration and demographic patterns have contributed to increasingly diverse community, family, school and prior-to-school contexts. There is much to be gained from research that recognizes such diversity and explores the transitions experiences and expectations of all involved.[42]

Research gaps are also noted in the factors identified and studied in relation to school and community influences on transition to school.[5] While many studies identify risk factors, vulnerabilities, or the impact of disadvantage on children and their transitions to school, fewer explore the strengths inherent among families, schools and communities.[40] Assumptions about disadvantage and deficit can color the issues explored.[7]

Conclusions

Starting school successfully is a social and communal endeavour. Schools and communities make significant contributions to children's connections with school, both in the transition process and in later school engagement. Where children and their families feel connected to schools, valued, respected and supported in schools and communities, they are likely to engage positively with school, with the result that not only children and families, but also schools and communities benefit. When the reverse occurs, with children and families feeling alienated from school and unsupported in the community, communities and those within them suffer.

Implications

In order to meet increasing pressures for greater accountability of academic outcomes, it can be tempting to focus on increasing the readiness requirements of individual children as they start school. This approach overlooks the significant influence of schools and communities on children's engagement with school.

Policy perspectives that support the roles of schools and communities in transition are based on:

1. collaborating with multiple stakeholders across a range of contexts;
2. acknowledging transition as a joint responsibility, rather than something "owned" by a particular group;
3. recognizing the importance of relationships and providing time and resources to support relationship-building; and
4. identifying the existing strengths, rather than deficits, of families and communities and developing strategies to build upon and extend these strengths.

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School Readiness and International Developments in Early Childhood Education and Care

Sheila B. Kamerman, DSW

Compton Foundation Centennial Professor for the Prevention of Children and Youth Problems, School of Social Work, Columbia University, USA

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Subject

One major concern in many industrialized countries is that a large number of children enter primary school, and even kindergarten or its equivalent, with widely differing levels of preparation for formal schooling or *school readiness*.[a] When school readiness is narrowly understood, the emphasis is to prepare or *ready* children so that they develop a specific set of academic skills and abilities--follow directions, demonstrate reading and reasoning skills, and carry out independent work[1]--by the time they enter school. In contrast, the U.S. National Education Goals Panel[b] took a broader approach, arguing that school readiness encompasses five dimensions: physical well-being and motor development, social and emotional development, language usage, cognition, and general knowledge.[2] It is this broader definition, which has international applicability, that frames this discussion, with special attention to academic and related skills.

Research has found that on starting kindergarten, children who participated in high quality, model preschool programs were significantly more advanced in key areas of development than those who were in parental or informal care.[1] The key areas were language, literacy and reasoning skills, and children's concepts and understanding of the world around them. Former preschool participants were more eager to learn and try new things and less likely to be retained in a grade or placed in a special education class.[3] Of particular importance, these results were disproportionately achieved by disadvantaged children.[4,5]

Problems

Because children's readiness to learn is so strongly associated with future school performance, children who enter kindergarten less ready than their peers are unlikely to ever close the

achievement gap. Given this concern, there is growing interest with regard to which programs are successful in achieving readiness goals. What does research tell us about the impact of ECEC programs on school readiness? And what are the implications for early childhood education and care (ECEC) policy and program development?

Research Context

Most of the research on school readiness has been conducted in the U.S. Most of the U.S. research on the impact of ECEC on school readiness has highlighted two small-scale, random-assignment, experimental model programs: the High/Scope Perry Preschool Program and the Carolina Abecedarian Study. These studies found that high quality early childhood education can have large and significant effects on school readiness, produce both short- and long-term cognitive and academic benefits for children from disadvantaged backgrounds, and that the positive effects are disproportionately larger for disadvantaged children.[4,5,6,7,8] A second focus has been on Head Start, the large scale compensatory education program now serving, primarily, 3- to 4-year-olds, designed to remedy the deficiencies disadvantaged children face when they start school. Studies of this program found that participation brings short-term benefits to children's cognitive and socio-emotional development, but these positive impacts have been found to fade out by around the third grade.[5,6,8,9] There is some debate regarding whether such fade-out is a problem of the program or is related to the poor schools attended by these children once they leave the program.

In contrast, we know much less about the effects of the typical preschool programs that most children experience in the U.S. and other English-speaking countries. Generally, these are more diverse, pro grammatically and in terms of the children served, and are of lower quality and lower cost than the model programs or Head Start. Several studies of such programs have demonstrated significant positive benefits and produced important results in terms of preparation for entry into primary school. In several cases, cognitive gains during the early childhood years were sustained through the early school years.

Recent Research Results

Magnusson, Ruhm and Waldfogel (2004)[10] focus on school readiness using data from the Early Childhood Longitudinal Study–Kindergarten Class of 1998-99 (ECLS-K), a large nationally representative sample of children who entered kindergarten in the fall of 1998. The overall

finding is that children who attended prekindergarten programs entered primary school more ready to learn and had better math and reading performance at school entry. As well, there were more lasting cognitive gains for disadvantaged children.

Other U.S. studies finding positive school readiness outcomes include: the Chicago Child Care study, the Cost, Quality and Child Outcomes study, the National Institute of Child Health and Human Development (NICHD) Study of Early Childcare, the Southern Regional Education Board (SREB) study, and a study of a universal preschool program in Tulsa, Oklahoma, that concluded that regardless of race, ethnicity, and/or family income, the children who participated in the program demonstrated enhanced school readiness as compared with a similar group of children who did not participate. [11]

Several international studies reached the same conclusions, including the Swedish longitudinal studies,[12,13] a New Zealand longitudinal study (Competent Children's Project), and a more recent British study, the Effective Provision of Pre-School Education (EPPE) project.[c] The New Zealand study found that literacy, math, and social skills were sustained even at age 20.

Implications

Six lessons from this ECEC research are clear and generalizable internationally:

First, expanding access to ECEC for 3- to 4-year-olds is a key policy for enhancing child well-being, in general, and school readiness, in particular. Research has documented that preschool education can significantly improve primary school readiness and school performance and enhance overall child development. Children who participate in preschool programs are more likely to have better language skills, better verbal skills, better arithmetic skills, and consistently higher reading achievement scores. They are more interested in school when they attend primary school: They are more motivated to learn, to attend school, and to complete assignments and are more likely to have long term academic success. The universal preschool programs in Denmark, France, Italy, and Sweden are preschool exemplars, in which almost all children of 3 to 4 years old are enrolled.

Second, there is a growing body of evidence that quality can make a difference although the debate about the definition of quality continues. Children who receive high quality ECEC (defined as high staff-to-child ratios, small groups, and qualified/trained staff) are likely to

demonstrate better cognitive and language abilities while those in lower quality settings are more likely to have difficulties with language, social, and behavior skills.[14] Moreover, benefits for children of well-designed, intensive forms of ECEC (i.e., which are responsive to children's needs and use good pedagogy) are less likely to fade out than those that are merely designed for custodial purposes.

Third, disadvantaged children benefit significantly more from a good quality preschool experience than more advantaged children. Preschool attendance can narrow the achievement gaps faced by disadvantaged children.

Fourth, there is an emerging trend toward integrating the education and care services into one system, increasingly into the educational system, a development likely to result in greater public support and higher quality programs. Sweden, New Zealand, Spain, Scotland, and the UK have already implemented this system.

Fifth, making preschool programs a full school-day program rather than a very short day, appears to lead to more positive outcomes. [15] The Scandinavian programs cover the full workday and the French preschool covers a long school day with after-school programs.[16]

Sixth, there is a growing need to pay more attention to policies and programs for parents with children under 3 years old, in particular parental leave policies. The EU provides statutory maternity and parental leaves ranging from 6 months to 3 years and Canada provides one year.

Conclusions

Promoting school readiness has emerged as an increasingly important factor in driving ECEC policy and program initiatives, supplementing the existing influence of high labor force participation rates of women with young children, with a goal of increasing human capital. As a result, countries are increasingly expanding the supply of ECEC places, especially for 3- and 4-year-olds (there is largely universal coverage in preschool or primary school for the year preceding compulsory school entry), and beginning to pay more attention to children under 3 years old.

A new report issued by UNESCO (2006)[17] reminds us that despite well-documented benefits on all aspects of child development and child well-being, ECEC remains the "forgotten link in the education chain" even for the 3- and 4-year-olds in much of the world. Especially important,

about half of the world's countries have no early childhood care and education policy for children under 3 years old.

The European Commission has taken an explicit position with regard to access. At the Barcelona summit in 2002, explicit targets were set with regard to ECEC arrangements. The commission agreed that "Member States should remove disincentives to female labor force participation and strive, taking into account the demand for childcare facilities and in line with national patterns of provision, to provide childcare by 2010 to at least 90% of children between 3 years old and the mandatory school age and at least 33% of children under 3 years of age".[18] About half of the EU-25 countries have achieved the goal for the 3-, 4-, and 5-year-olds, in particular the Scandinavian countries, Belgium, France, and Italy. The UK and Netherlands are approaching this goal. If coverage for children under 3 years old includes paid and job protected maternity and parental leaves, as well as services, this goal is close to being achieved as well.

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Notes:

[a] *Kindergarten* in the U.S. is the year before compulsory school begins. It is universal, free, and voluntary and is attended by almost all 5-year-olds. It is viewed as the transitional year, before formal schooling begins.

[b] U.S. bipartisan and intergovernmental body of federal and state officials created in July 1990 to assess and report state and national progress toward achieving national education goals.

[c] An important, large scale, longitudinal study--Effective Provision of Pre-School Education (EPPE) Project and Effective Pre-School and Primary Education 3-11 (EPPE–3-11) is currently being carried out in the UK, funded by the UK Department of Education and Skills. The findings agree with those of the U.S. research reported here.

The Role of Parents in Children's School Transition

Philip A. Cowan, PhD, Carolyn Pape Cowan, PhD

University of California, Berkeley, USA

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Introduction

The prevailing explanatory model of children's successful transition from preschool to elementary school assumes that major risk and protective factors lie primarily within the child in terms of cognitive and emotional "readiness" to enter kindergarten.[1] Consistent with this assumption, most intervention efforts involve school-based attempts to improve children's cognitive and self-regulation skills. Investigations of the social contexts and relationships that affect children's transition to school have only begun to emerge. Surprisingly, despite the general acknowledgment that parent-child relationships constitute central contexts for children's development,[2] there has been little attention to the roles parents play in children's transition to elementary school, and almost none to planning or evaluating interventions addressed to parents of preschoolers. We attempt to address these gaps.

Subject

In most studies of children's development, "parent" means mother, and parenting is studied in isolation from other family and social contexts in which parent-child relationships develop. We present a multidomain model of children's development that locates mother-child and father-child relationships within a system of relationships inside and outside the family, paying special attention to the quality of the relationship *between* the parents. We then describe the results of preventive interventions based on our conceptual model in the form of a couples group led by trained mental health professionals.

Problems

Challenges for the young pre-schooler about to enter kindergarten have been well documented.[3,4,5] What makes this an especially important developmental transition period is the consistent evidence for a "trajectory hypothesis" in both middle-class and low-income samples: how children fare academically and socially in early elementary school is a strong predictor of their

academic, social, and mental health outcomes throughout high school.[6,7,8] These findings imply that interventions to improve the child's relative standing at school entrance could have long-term payoff.

Research context and research gaps

Research claiming to demonstrate the importance of parent-child relationships in children's school adaptation has a number of important gaps. We lack longitudinal studies that trace family trajectories across the school transition. Information about fathers' potential role in their children's transition is extremely sparse. Only a handful of studies examine other aspects of the family system context (e.g., the couple relationship) that may affect how children fare. Finally, outside of early school-based interventions that focus on children's readiness, we have very little evidence concerning family-based interventions during the pre-school period that could help children meet the new challenges of entering school successfully.

Key research questions

What do we know from current research about parents' role in shaping children's transition to school? What do the findings tell us about interventions that might provide children with a "leg up" as they make the elementary school transition?

Recent research results

Concurrent correlations. It has been well-established in countless studies that parents who are warm, responsive to children's questions and emotions, provide structure, set limits and make demands for competence (authoritative parents, in Baumrind's terms) have children who are more likely to succeed in the early years of school and get along successfully with peers.[9,10,11] The problem with these studies is that they do not establish antecedent-consequent connections.

Longitudinal studies. Only a few studies, including two of our own, assess families during the preschool period and again after the child has entered elementary school.[8,12,13] The basic finding is of considerable consistency across the transition in terms of mothers', fathers', and children's characteristics; both mothers' and fathers' authoritative parenting style during the preschool period explains significant variance in children's academic achievement and externalizing or internalizing behaviour with peers two and three years later.

The multidomain context of parenting. Our findings support a family systems risk model[14] that explains children's cognitive, social and emotional development using information about five kinds of family risk or protective factors: (1) Each family member's level of adaptation, self-perceptions, mental health and psychological distress; (2) The quality of both mother-child and father-child relationships; (3) The quality of the relationship between the parents, including communication styles, conflict resolution, problem-solving styles and emotion regulation; (4) Patterns of both couple and parent-child relationships transmitted across the generations; and (5) The balance between life stressors and social supports outside the immediate family. Most studies of children's development focus on one or at most two of the five family risk and protective domains. We have shown that each domain, especially the quality of the couple relationship, contributes uniquely to predicting children's academic and social competence, and their internalizing and externalizing problem behaviours in early elementary school.[15] Consistent with prevention science, then, we have identified a set of factors that can be targeted in interventions to lower the probability that children will have difficulties, and increase the probability that they will display both intellectual and social competence in early elementary school.

Family-based parenting interventions. Over the past 35 years we have conducted two randomized clinical trials in which some couples were randomly chosen to participate in couples groups led by trained mental health professionals, while others were not. The male-female co-leaders met with the couples weekly for at least 4 months.

In the Becoming a Family Project,[12] we followed 96 couples with interviews, questionnaires and observations over a period of five years from mid-pregnancy to their first child's completion of kindergarten. Some of the expectant couples, randomly chosen, were offered participation in a couples group that met with their co-leaders for 24 weeks over 6 months. Each group session included some open time to discuss personal events and concerns in their lives *and* a topic that addressed one of the aspects of family life in our conceptual model. We found that, while there was a decline in satisfaction as a couple in new parents without the intervention, the new parent couples who participated in an ongoing couples group maintained their level of satisfaction over the next five years until their children had finished kindergarten. Five years after the couples groups ended, the quality of both the couple- and parent-child relationships measured when the child was 3-1/2 was significantly correlated with the children's adaptation to kindergarten (child self-reports, teacher ratings and tested achievement).

A second intervention study, the Schoolchildren and their Families Project[16] followed another 100 couples from the year before their first child entered kindergarten until the children were in 11th grade. There were three randomly-assigned conditions – an opportunity to use our staff as consultants once a year (the control group), a couples group that emphasized parent-child relationships during the open-ended part of the evenings (the more traditional approach), or a couples group that focused more on the relationship between the parents during the open-ended parts. When the families were assessed during kindergarten and 1st grade, parents who had been in a group emphasizing parent-child relationships had improved in the aspects of parenting we observed in our project playroom, with no improvement in the control participants. By contrast, parents who had participated in a group in which the leaders focused more on parents' issues as a couple showed decreased conflict as a couple when we observed them, *and their parenting became more effective*.

Both intervention variations affected the children. The children of parents in the parenting-focused groups improved in positive self-image, and were less likely to show shy, withdrawn, depressed behaviour at school. Children of parents in the couple-focused groups were at an advantage in terms of higher scores on individually administered achievement tests, and lower levels of aggressive behaviour at school. The interventions continued to have a significant impact on the families over the next 10 years in terms of both self-reported and observed couple relationship quality and behaviour problems in the students. The impact of the couple-focused groups was always equal to or greater than the impact of the parenting-focused groups.[17]

Conclusions

In sum, we have shown through correlational studies that the quality of the parent-child and couple relationships is related to the children's early school adaptation. Through intervention studies, we see that changing the tone of couple and parent-child relationships has a long-term causal impact on children's adaptation to school.

Implications

Our emphasis on family relationships as important contexts for children's abilities to cope with the demands of elementary school admittedly poses a challenge for education policy makers and school personnel. We are suggesting reaching out to parents before children enter school and proposing that children will benefit from an enhanced relationship between their parents. It has

been our experience during years of consulting to preschool and elementary school staff that very few have training in communicating with parents, and none are trained to provide interventions that might enhance co-parenting or couple relationships.

An obvious alternative would be to hire trained family educators, social workers, nurses or clinical psychologists to do the outreach and lead groups for couples. Of course this would be costly. What is as yet unknown is the balance between benefits and costs. If the cost of dealing with behaviour problem children to the school and society is greater than the cost of these family-based interventions, perhaps it is time to consider such an approach.

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