

## SCHOOL SUCCESS

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# Services or Programs that Influence Young Children's Academic Success and School Completion

Carol McDonald Connor, PhD, Frederick J. Morrison, PhD

University of Michigan, USA

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### Introduction and Subject

Early childhood care and education/intervention programs have been shown to significantly enhance children's prospects for academic success by reducing the probability of referral to special education, grade retention, and leaving school prior to high school graduation, especially for children at risk for academic underachievement.<sup>1-3</sup> Risk factors include poverty, developmental and learning disabilities, belonging to an ethnic minority, and speaking English as a second language, among other things.<sup>4,5</sup> In addition, early childhood programs demonstrate significant return on investment over children's lifetimes according to cost-benefit analyses.<sup>6</sup> Perhaps one of the most important functions of early childhood programs is providing a strong foundation for literacy development, bearing in mind that poor academic skills are strongly associated with dropping out of school and delinquency.<sup>7,8</sup> However, there is an important caveat with regard to these research findings: only early childhood care and education programs of high quality are

associated with positive outcomes. Poor quality programs appear to be associated with negative child outcomes<sup>9</sup> and, unfortunately, the very children most likely to benefit from early childhood programs are the least likely to be enrolled in high-quality programs.<sup>10</sup> New research is revealing how high-quality programs may be supporting children’s language and literacy development and that the impact of specific preschool language and literacy activities may depend on children’s language and emergent literacy skills.<sup>11,12</sup>

## **Problems, Research Context, and Research Questions**

As educators and policy makers consider whether and how to implement high-quality early childhood care and education programs, there are two important issues to keep in mind:

1. In order to understand the potential impact of early childhood care and education programs, an understanding of the multiple factors that affect children’s academic success and school completion is needed.
2. Based on an understanding of these multiple factors, determining which elements of early childhood education and intervention are associated with long-term positive effects on children’s academic success is important.

There is a growing consensus about the benefits of early childhood programs; however there is considerable controversy about defining what high-quality early childhood care and education might be and what should be taught to very young children.<sup>1,3,13</sup> Recent research provides important insight and guidelines regarding these subjects.

## **Recent Research Results**

A number of longitudinal studies, some using nationally representative samples, contribute to our body of knowledge regarding

1. the multiple factors that affect children’s success in school
2. the aspects of early childhood programs that impact these multiple factors.

In the United States, such programs include studies of Head Start, Abecedarian and Highscope/Perry Preschool Programs,<sup>2</sup> the NICHD Early Childcare Research Network study (NICHD-ECRN), and the Early Childhood Longitudinal Study (ECLS), as well as smaller studies such as the Home-School Study.<sup>14</sup> Studies on specific interventions, such as Dialogic Reading<sup>15</sup> are also

informative. New studies of preschool classroom activities are also revealing.<sup>16</sup> Summaries of the relevant research findings are provided below.

## **Multiple Influences on Children’s Academic Success**

### *Child factors*

Perhaps the most robust predictors of children’s school success are their early oral language skills, including vocabulary, use of complex sentences, and metalinguistic awareness (of which phonological awareness is one element).<sup>4</sup> Emergent literacy skills, including letter knowledge, knowledge about letter-sound correspondence and understanding the purposes of reading and writing,<sup>4</sup> are also associated with later school success.<sup>17</sup> Emerging evidence indicates that children’s self-regulation skills — their ability to maintain engaged focus, to stay on task, to inhibit inappropriate behaviours, and to delay gratification — may also predict later school success.<sup>18-20,21,22</sup> Overall, there is good evidence that parents and teachers, as well as home and school environments, can influence the development of these child skills.<sup>14,16,18,20,23-26</sup> Thus, early childhood programs that focus on strengthening children’s language, literacy, and self-regulation across multiple contexts typically prove to be most effective in promoting school success.

### *Sociocultural factors*

The effect of poverty, race/ethnicity, and community are distal factors that, research indicates, are associated with children’s school success.<sup>26,27</sup> However, it is not always clear how these distal factors operate through more proximal factors such as parenting and schooling. Certainly, children’s health and well-being, which are affected by socioeconomic status, can influence their ability to pay attention in class and to interact with parents, teachers, and peers.<sup>26</sup> There is also evidence that the achievement gap between ethnic/racial minority and majority students begins before children enter elementary school and may be related to the amount and ways that parents talk to their children and to the home learning environment.<sup>5,8,14,28</sup> Unfortunately, there is also good evidence that parents’ educational level and socioeconomic status (SES) are positively related to the quality of the early childhood program in which their children are enrolled (NICHD-ECCRN studies) and the subsequent schooling their children receive.<sup>8,27</sup> Children from higher SES homes tend to attend higher quality early childhood programs and children from lower SES home tend to attend lower quality programs.<sup>11</sup>

### *Parenting*

In general, the influence of parenting is greater than is the influence of early childhood programs on children's school success. In fact, the quality of parenting young children receive accounts for almost four times the variability in children's academic outcomes when compared to the independent effect of early childhood programs.<sup>29</sup> Distal factors such as socioeconomic status and culture/ethnicity/race tend to operate through the more proximal dimensions of parenting<sup>30</sup> including the home learning environment,<sup>14</sup> parents' warmth-responsivity,<sup>31,32</sup> and parental control and discipline.<sup>33</sup> Theoretically, then, early childhood programs that focus on fostering parenting skills and rich home learning environments should be, and are, very effective in promoting children's school success; albeit some studies indicate that programs that are solely parent-focused (i.e. with no center-based child focus) may not be as effective.<sup>34</sup> Early childhood care and education programs that provide direct child intervention *and* foster close ties with parents, encourage effective parenting, and parenting behaviours that promote children's language, cognitive, and literacy skills are among the most effective programs with the strongest cost-benefits ratios.<sup>26,35</sup> For example, the Title 1 Chicago Child-Parents Centers, which provided both child center-based intervention as well as parent education, yielded a total societal benefit of more than \$7 per dollar invested, taking into account reduced educational and criminal justice costs and increased taxes paid on the higher earnings of the participants.<sup>6</sup>

### *Early childhood care and education*

More than 60% of the almost 20 million children under the age of five, living in the United States, will spend time in some form of regular childcare.<sup>36</sup> Thus, the quality of care all children receive while parents work is becoming an increasingly important consideration for service providers and policy makers. Although the effect of parenting is greater than that of early childhood programs, program quality still significantly predicts children's school success even after controlling for the effect of parenting.<sup>29</sup> We discuss the definitions of "high-quality" early childhood programs and their effects on children's school success in the next section. Social and policy implications surrounding parents working out of the home, such as family leave and workplace policies that make it easier for parents to combine work and family responsibilities deserve more discussion than we can provide in this paper and readers are referred to articles in this Encyclopaedia<sup>37</sup> and other resources.<sup>13</sup>

### *Defining high-quality early childhood care and education/intervention*

One of the dilemmas when designing effective early childhood programs is that there are widely differing definitions of program quality.<sup>3</sup> For some, quality ends with physical plant, teacher credentials, and child-staff ratios. Yet these factors alone do not explain why some early childhood programs are effective in supporting children’s academic success and others are not. In the most rigorous studies, quality is closely tied to definitions of child success. When the goals of early childhood programs differ, the meaning of “child success” and the measured outcomes differ. For example, success has been variously defined as children’s school completion, delinquency, referral to special education, linguistic skills, cognitive ability, academic performance, and social development, including infant responsiveness, peer relations, and behaviour in the classroom.<sup>9,10,38-44</sup> Recently, with the passage of the *No Child Left Behind Act* in the U.S., publicly funded early childhood programs have been encouraged to increase their focus on language and literacy skill development. Further, depending on definitions of child success, there is also evidence of child characteristics by instruction interactions so that early childhood activities that promote, for example, early literacy for one child, might not be effective for a child who has different skill strengths and weaknesses.<sup>45,46</sup>

Thus, in order to design high-quality preschool programs, service-providers and policy-makers need a clear sense of what the program is to accomplish. If the goal is to support children’s academic success later in school and foster school completion, then high-quality programs should combine elements that are associated with children’s “school readiness,”<sup>3</sup> which include developing language, literacy, and self-regulation, as well as support for parents, because, as discussed earlier, research indicates that each of these factors provides a foundation for school success. Further, where there is evidence of specific skills in individual children, these should be considered in the instructional strategies and developed through instruction interactions.

As noted previously, early childhood care and education programs that include strong support for parents and caregivers are among the most effective, with a strong societal return on investment. Parenting is a crucial predictor of children’s school success and early childhood programs provide an opportunity to support parents in their efforts at home while supporting children directly in the classroom. Effective programs include home visiting and outreach efforts such as Head Start and the Title I Chicago Parent-Child centers,<sup>6</sup> parent literacy programs,<sup>47</sup> providing books to take home, and specific interventions, such as Dialogic Reading.<sup>15</sup> These parenting programs frequently support families’ communities as well.<sup>3</sup>

One of the most consistent observations in early childhood classrooms where children went on to develop stronger academic skills was the linguistic environment of the classroom, including teacher-child interactions, teacher responsiveness, and teachers' styles of interacting with children. In these studies,<sup>14,48-51</sup> verbal interactions between the teacher and students were consistent predictors of children's early literacy and communicative competency. These programs frequently enhanced children's language and pre-reading skills and were associated with improved reading skills in later grades. For example, children in Head Start and Title 1 preschool classrooms where teachers used more wh-questions (i.e., who, what, where, when, and why) rather than yes-no questions or imperatives (i.e., commands such as, "sit down") tended to achieve higher scores on measures that predict later reading success.<sup>45</sup> Classroom transcripts revealed that when teachers used wh-questions, they tended to elicit more cognitively challenging talk,<sup>14</sup> including predicting, inferring, and enriching vocabulary, than when they used yes-no questions or imperatives (i.e., commands such as "sit down). In classrooms where teachers interacted with preschoolers using more cognitively challenging talk, children demonstrated stronger vocabulary and reading comprehension skills in first grade and beyond than did children in classrooms where the teacher-child interactions were proportionally more didactic and directive.<sup>14,52</sup>

One reason the linguistic environment of early childhood programs may have such an important influence on literacy development is that young children must learn to talk and become competent users of language across a variety of settings.<sup>52</sup> Further, children may come to school with the discourse practices of their heritage discourse community, which may differ in important ways from the discourse practices of the school classroom.<sup>53</sup> Preschools can offer an opportunity for these children to learn English (in the U.S.), if they speak another language at home, and to learn the kinds and ways of talking that are generally preferred in schools, including the more formal interactions that occur in classrooms. Some educators<sup>54</sup> suggest that explicitly teaching children who may not learn classroom discourse routines at home (such as responding to and using wh-questions and using school grammar) may be more effective in supporting children's later success in school than ignoring or accepting forms of English that may work against their ongoing academic achievement.<sup>55</sup> That is not to say that using a dialect other than school forms of English should be considered a risk factor for underachievement. New research indicates that for U.S. African-American Preschoolers, there is a U-shaped relation between frequency of African-American English (AAE) feature use and emergent language and literacy, including phonological awareness.<sup>56,21,22</sup> Children who used AAE features most or least frequently demonstrated stronger

emergent literacy than did preschoolers who used AAE features with moderate frequency.

Beyond language skills, emerging evidence indicates that children's early self-regulation predicts school success<sup>21,22</sup> and that parenting practices may influence its development.<sup>5, 18</sup> The importance of self-regulation is well established for older children.<sup>57</sup> However, it is not clear what role early childhood care and education programs might play or what teaching strategies might nurture its development. However, preschoolers who achieved higher scores on a task of self-regulation that required children to switch tasks demonstrated stronger growth in vocabulary, emergent literacy, and math than did preschoolers who had lower scores.<sup>21,22</sup> More research is needed in this area, especially focusing on how to improve preschoolers' self-regulation in the classroom.

Although research is just emerging on specifically *why* and *how* to teach young children elements of literacy, over the past decade *what* children need to learn has been fairly well established:<sup>1,17</sup>

1. Letters and letter-sound correspondence in combination with phonological awareness, including rhyming, phonemic segmentation and blending
2. Emergent reading
3. Emergent writing
4. Basic mathematics concepts
5. Metacognitive aspects of literacy.

Children who begin first grade with strong skills in these areas experience greater success learning to read than do children with weaker skills. For example, in a nationally representative sample, children who began kindergarten already knowing their letters were stronger readers by the end of first grade than were children who did not<sup>58</sup> — an important advantage that should follow them through school.<sup>59</sup> Phonological awareness (e.g., rhyming) is one of the most important predictors of later reading ability and is a teachable skill that, when explicitly taught in combination with letters, promotes stronger reading skills.<sup>60</sup> Pretending to read storybooks, emergent reading,<sup>4,61</sup> and pretending to write, also called invented spelling or emergent writing,<sup>62</sup> are also positively associated with children's early literacy, as is dialogic reading. In fact, dialogic reading (teachers or parents read storybooks with children in cognitively challenging ways) can be effectively taught to parents and teacher and leads to stronger early literacy skills.<sup>63</sup>

The role of explicit instruction in emergent literacy, specifically letter knowledge, phonological awareness, and other print concepts is less well understood but new research indicates that a combination of child-centered strategies<sup>64</sup> and explicit instruction may yield stronger results than either one alone.<sup>12</sup> In addition, the content of this explicit instruction appears to have a differential impact on preschoolers' emergent literacy and vocabulary growth depending on the skills with which they enter preschool.<sup>16</sup> In this study, preschoolers with weaker emergent literacy and vocabulary skills demonstrated greater growth when they interacted with their teacher in activities specifically targeting emergent literacy (phonological awareness, shared book reading). For preschoolers with stronger skills, a wider variety of activities, both explicit and implicit, supported their emergent literacy and vocabulary growth. Moreover, the more time preschoolers spent in these activities, the stronger was their emergent literacy growth – the less time they spent in these activities, the less their emergent literacy growth. The amount of time preschoolers spent in play (dramatic play centers, blocks, etc.) positively predicted vocabulary growth, especially for preschoolers with weaker vocabulary skills. Play was not, however, associated with emergent literacy growth. This specificity has been observed for parent-child interactions and shared book reading as well.<sup>65,66</sup>

Elements of emergent literacy and language (letter knowledge, phonological awareness, etc.) can be taught through playful activities, such as pretend story writing, word and rhyming games, shared storybook reading, number games, puzzles, and poetry, and by attending to the expectations for self-regulated behaviour in the classroom. Children who begin school at a disadvantage, with low vocabulary skills and no experience with letters, reading, and word games may especially benefit from such activities.<sup>16</sup> For example, Head Start children who began the school year with smaller vocabularies generally achieved stronger early literacy skills when their teachers talked more frequently about letters, letter sounds, and rhyming, played word games, and encouraged children to write their names<sup>45</sup> and used invented spelling.<sup>62</sup> However, such talk affected growth in these skills much less when children started the school year with strong vocabulary skills. For these children, more frequent focus on metacognitive aspects of literacy, such as talk about storybooks, the purpose of reading and writing, authors, and the act of writing appeared to be related to stronger early literacy skill growth.<sup>45</sup> Thus, the effectiveness of specific instructional strategies may depend on children's initial skill levels and the child outcome of interest.<sup>16</sup>



These kinds of *child by instruction* interactions are evident in the early elementary grades as well.<sup>67,68</sup> With this in mind, the term “high-quality” program may be misleading because what might be high quality for one child may be ineffective, and thus low quality, for another, depending on the goals of the early childhood program. It may be more useful to use the term “effective” instead of “high-quality.” This would encourage focus on child outcomes rather than a “one-size-fits-all” silver bullet approach to designing effective early childhood care and education programs.

## **Conclusions and Implications**

Early childhood care and education programs provide significant support for children’s academic success, measurable societal returns on investment, and a clear strategy for supporting school completion, especially for children at risk for school failure. However, while the effectiveness of early childhood programs is closely tied to each of these benefits, ineffective programs may actually have a negative impact on children’s academic achievement. Effective early childhood programs take into account the multiple factors that influence children’s school success, including parents, teachers, home and classroom. Programs that provide two-generation support (including both the child and parent/caregiver) have consistently been found to be associated with school success. Specific strategies, such as parent outreach and education, dialogic reading, and home visits, are quite effective in supporting parenting skills, fostering parent sensitivity and discipline practices, as well as improving children’s home learning environment. Early childhood programs that provide a linguistically rich learning environment with explicit focus on developing emergent literacy, where cognitively challenging talk is encouraged and emergent literacy instruction is tailored to the needs of the students appear to be most effective in supporting language and literacy development and providing critical foundational skills for school success. These foundational skills include knowing letters and letter-sound relations, phonological awareness, basic math concepts, emergent reading and writing, and an understanding of the purposes of reading, writing, and math. Emerging research indicates that nurturing children’s self-regulation skills may provide another important strategy for improving their school success. Overall, effective early childhood care and education programs are proving to be one of the most powerful means of supporting families and their children on the road to academic success and school completion.

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