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SCHOOL READINESS

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

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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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