Early Childhood Research Digest #2

What We Know about Pre-Kindergarten Outcomes for Children: The Top 10 Findings from Early Childhood Research

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Introduction:
School policies at the state and federal levels have been modestly targeted toward young children for more than a century, with at least 32 states offering pre-kindergarten (Pre-K) for 4 year olds by 1989 (Mitchell, Seligson & Marx, 1989). Four-year-old children have been attending public school programs in Wisconsin ever since a 1848 constitutional amendment, which called for districts to offer free programs for children starting at age 4. There is now renewed interest in this state’s 4-year-old kindergarten, partly attributed to the push for “school readiness,” an increase in the state share of funding for school districts to offer this program, and an availability of space in some schools due to declining enrollments in older grades. As of 2002, almost half of the state’s 426 districts offered some formal 4-year-old kindergartens in this state; nearly all were half-day programs during the school year (DPI, 2002). The number of Pre-K programs appears to be increasing each year.

Pre-kindergarten children are distinctly different from their 5-year-old counterparts because they are smaller in size, and they need concrete activities to stimulate cognitive learning. Most of this state’s 4-year olds are enrolled in community-based child care centers or family child care homes, where licensing rules specify such elements as the size of the group (1 teacher for every 13 children and a limit of 26 for two teachers), space (35 sq. feet per child), and amount of indoor and outdoor play. For full-time working parents, selection of a child care program that meets both the parents’ working hour requirements and the developmental needs of their 4-year-old may be eased somewhat if half of the hours needed are free from the schools. On the other hand, these same parents may not select the free public school 4-year old program because it requires transitions to and from work during the day and perhaps a different arrangement in the summer.

In the last four years, the concept of “community approaches,” in which public schoolscontract with or negotiate services from local community child care has begun to flourish. The child may receive a higher quality of care from a degreed teacher in the public school program, but longer hours are available from the child care program. Linking public school programs with other early childhood programs in the community may serve to increase parent and family satisfaction, as well as increase collaborative relationships.

The research digest which follows is not specific to 4-year-olds, but points to the “top 10” findings from early childhood research which may contribute to the caveats for undertaking a collaborative approach in communities. All other considerations aside, assuring the quality of the pre-kindergarten program is necessary, if communities are to claim that all the 4-year-olds are well served. This research digest focuses on both short- and long-term outcomes, from major early childhood research projects over the past 25 years.
**Short Term Outcomes**

1. **School-Readiness:** Multiple studies have found that enrollment in Pre-K improves language development, literacy skills and cognitive skills as well as fine motor development (Peisner-Feinberg, et al. 2001). A meta-analysis of state-funded Pre-K program evaluations found that all programs indicate significant positive impacts in developmental competence by the end of preschool. However, these improvements seem to fade after first grade, with significant impacts mostly limited to kindergarten and first grade (La Paro & Pianta, 2000).

2. **Social Skills:** Researchers have suggested that school-readiness outcomes are often related to the child’s social competence (Dodge, 1995). Studies have found that quality pre-kindergarten programs can assist in the child’s development of a positive sense of self as well as trust in others, nurturing their overall social development (Dodge, 1995; Van Zant & Camozzie, 1992).

3. **Program Model Effectiveness:** Studies have compared different models of Pre-K programs and their outcomes for children (Shipley and Osborne, 1996; Marcon, 1996). According to Marcon, the didactic, academically-directed model and the combination of the child-initiated model and the didactic, academically-directed model resulted in negative effects for the participants during their transition from third grade to fourth grade. Children who had attended the academically-oriented model program and the combination of the child-initiated model and the academically-directed model program performed more poorly in academic achievement and social development than did their peers who had attended the child-initiated model program.

Close teacher-child relationships characterized by high levels of teacher sensitivity and responsiveness were related to higher language skills, attention skills, social skills and fewer behavioral problems for participants (Marcon, 1996).

**Long Term Outcomes**

4. **IQ:** Programs such as Abecedarian and Head Start report IQ gains during or after the children’s participation in the program. While the Abecedarian research has found effects that are sustained until school entry and persisted into adolescence, most IQ gains tended to “fade-out” gradually after attending the program, particularly if there were no other educational interventions before the age of three.
A meta-analysis of state-funded Pre-K program evaluations found that all states reported non-trivial positive effects sustained into kindergarten for at least one cohort. However, findings were inconsistent in first grade. Significant effects most frequently occurred in language and academic/literacy (La Paro & Pianta, 2000).

5. **Achievement Tests:** A meta-analysis of state Pre-K programs found a significant impact on academic achievement tests at one or more grade levels. Effect sizes were low however. Head Start programs generally report findings similar to the IQ test results, with a gradual reduction in the impact over time (Barnett, 1995). Some studies, however, report that this finding may be due to study design flaws showing a drop in children placed in special education, or that are retained a grade. Studies without these types of flaws do indicate persistent gains in achievement test results.

6. **Reduced Grade Retention:** Consistently, model programs and Head Start programs have been associated with a moderate to significant drop in grade retention. Research programs such as the High/Scope Perry Preschool Program and the Abecedarian Early Childhood Intervention report decreases in the number of children retained (held back) a grade in school (Schweinhart et al., 1993; Campbell & Ramey, 1995; Reynolds, 1996). Such models also report increases in the number of children who go on to graduate from high school, as compared to non-participating children. However, these are results seen in high-quality, intensive environments serving at-risk populations. These results have not been found systematically across all Pre-K programs. A meta-analysis of state-funded Pre-K programs found modest support for positive impacts in improving children’s developmental competence in a variety of domains, improving later school attendance and performance, and reducing subsequent grade retention (La Paro & Pianta, 2000).

7. **Special Education Placement:** Model programs such as the High/Scope Perry Preschool Program and the Abecedarian Early Childhood Intervention Program report a decrease in the number of children enrolled in special education classes. However, state-funded Pre-K program evaluations indicate a lack of positive impact on special education (La Paro & Pianta; 2000).

8. **Delinquency:** Model programs such as the Perry Preschool Program and Chicago’s federally-funded Child-Parent Centers report substantially lower rates of later law breaking and arrests among at-risk program participants than among non-participating children. An evaluation of a state-funded Florida program found fewer behavior problems as late as fourth grade. However, more generally state Pre-K programs report a lack of positive impact in prevention of later delinquency (La Paro & Pianta, 2000).
9. **Socialization:** Model programs such as the Perry Preschool program found an association between program attendance and increased commitment to school, as well as better relationships with friends and neighbors. Among the girls, it also reported increase in the percentage of females who later married and a decrease in out of wedlock births.

10. **Race and Culture:** State-evaluations tend to find that Pre-K programs provide the greatest benefits to minority children (La Paro & Pianta, 2000). For example, in Oklahoma Hispanic children benefited the most, followed by black children. However there were no significant effects for white children. Georgia reported that summer learning loss between Pre-K and kindergarten was substantial, particularly for African American children.

Children identified as speaking English as a Second Language (ESL) appear to benefit from preschool; the statewide Georgia program found those with two years of preschool fared better in language and literacy, math, social/emotional and fine motor skills than ESL children with one year of preschool.

Note: the key “model programs” that are frequently cited for their positive effects on children, such as Abecedarian and the Perry Preschool, served primarily low income, high risk and predominantly African-American children in small cities, therefore limiting generalizability from those programs to other preschool or Pre-K environments, including those of high quality. In fact, there is some indication that children from affluent families may actually show negative effects from Pre-K participation, in comparison to their socio-economic peers, perhaps because the home environment is of a higher quality than the school environment. For example, effects on reading scores were found to be negative for children from high income families compared to children left in their home environment (Barnett, 1995).

**Conclusion**
The increased debate about the appropriate age for “intervention for school readiness” and public school concerns (pre-kindergarten at age 3 or 4) is creating a large amount of literature about the value of early care and education. That is, if it’s important to start formal schooling at age 5 or 6 because children seem to flourish at those ages, then doesn’t it make sense to start at age 4, with 4K programs? Public schools with emergent leadership for early childhood intervention are making strides to include Pre-K programs; still others are exploring community approaches or collaborations with existing pre-school or child care programs, so that the children are served with higher levels of staff education than would normally occur.

These “top 10” findings from research on pre-kindergarten programs are clustered around cognitive, socio-emotional, and linguistic skill improvements, as
well as potential impacts such as reduced special education costs or lower delinquency rates. The answers to the question about the value of pre-kindergarten education remain centered on which population is being served. Are programs targeted to low-income children currently without access to high quality care, or middle-income children whose parents do not require full-day, full-year care? And if it is higher income families, what happens to horizontal equity and access to quality pre-kindergarten experiences for disadvantaged children? Will the achievement gap only grow larger, as public education expands its services to pre-kindergarten children, or will those children who need access to high quality continue to be in mediocre care until they enter the schoolhouse doors?

We need, as a state, to determine where and how our young children will be served prior to school entrance. This research digest may assist school planners and groups planning community approaches to clarify their objectives.
References


