

The
BALANCED
VIEW:

Research-based
information on
timely topics

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**WESTCHESTER
INSTITUTE
FOR HUMAN
SERVICES
RESEARCH**

7-11 South Broadway
Suite 402
White Plains, NY 10601
914/682-1969
FAX: 914/682-1760
www.westchesterinst.org

EARLY CHILDHOOD EDUCATION

Part 2: Characteristics of Effective Programs

Part I of the *Early Childhood Education* (ECE) edition of the *Balanced View* summarized the research on the immediate and long-term effects of early childhood programs upon children. As reported, the results of the methodologically strongest studies indicate that ECE can produce a substantial impact on children's lives, both immediately following their participation in ECE programs and long after their involvement in ECE. For example, the research has shown that ECE participation can lead to improved academic achievement, decreased grade retention, increased rates of high school graduation, higher employment rates and earnings, and decreased involvement with the criminal justice system.

Yet, while these benefits *can* be achieved through ECE programs, they are not always realized.

Why do some ECE programs produce large and lasting effects on children, while others do not? Researchers agree that the answer has to do with program *quality*.

What Defines Quality In Early Childhood Education?

Three strands of research have helped to define quality or "best practice" in ECE:

1) *experimental studies comparing different curricular models*, for example direct instruction curricula (where structured, drill and practice lessons prevail) vs. cognitively-oriented curricula (designed to develop children's problem-solving and "learning to learn" skills) vs. affective curricular approaches (which emphasize the development of self-concept, coping skills, and positive attitudes towards learning); 2) *field-research studies of large-scale programs*, such as Head Start, to determine if differences in implementation are related to child outcomes; and 3) *research on developmentally appropriate practice*, to determine if ECE programs that conform to the standards of appropriate practice achieve greater outcomes than programs that do not.

The findings from these streams of research provide

insight into the types of ECE programs and constellation of services that appear to be more effective. In general, the studies have addressed six areas of program design and practice:

- curriculum content,
- teachers and teaching practices,
- class size,
- onset and duration of services,
- intensity of services, and
- parent involvement.

Curriculum Content

Studies of ECE curriculum have found few consistent differences among the tested curricula on children's performance. Researchers, thus, have concluded that a variety of curricula can be beneficial in preparing children for school. Still, some studies have shown that direct instruction curricula may yield fewer benefits than interactive and affective curricula, especially on the development of children's social skills and behaviors.

Teachers and Teaching Practices

Effective ECE programs share an important commonality: effective teachers.

Many studies have found a link between positive child outcomes and teacher characteristics and practices. Effective teachers of ECE generally have more formal schooling or specialized training, they tend to be more attentive and nurturing toward individual children, and they are able to take greater advantage of "teachable moments" throughout the day. Effective ECE teachers are also more likely than others to use developmentally appropriate practices such as,

- engaging children as active learners,
- individualizing work,
- allowing children to move at their own pace,
- encouraging individual choice,
- encouraging children to use language to express ideas,
- praising children for their accomplishments and viewing errors as normal development,
- using flexible time schedules dictated by children's needs,
- recognizing the value of play and modeling how to play imaginatively,
- establishing integrated

and meaningful learning centers,

- varying activities from active to quiet, planned to spontaneous, small group to large group, and brief to sustained, and
- providing opportunities for outdoor exploration.

Some of the latest research has probed the conditions that promote effective teaching. The findings suggest that supportive supervision by trained professionals, formal training sessions, and scheduled time for planning, reflection, and collaboration are key to teaching success.

Class Size

The ECE research has shown a strong relationship between the number of children assigned to a teacher and child development outcomes. Small class sizes and low child-to-adult ratios contribute to positive long-term benefits for children. By "low," researchers generally mean less than seven children per adult. For example, highly effective infant/toddler programs (e.g., *Infant Health and Development Project, Syracuse Family Development Program*) were found to have a child-adult ratio of four to one; while effective preschool programs (e.g.,

Carolina Abecedarian, Perry Preschool Project) averaged six children to one adult. In contrast, only about one-third of current *Head Start*, school-sponsored prekindergarten, or child care programs have child-adult ratios as low.

Onset And Duration Of Services

Evidence about when ECE programs should begin and how long they should last is inconclusive. Programs that vary widely in both the onset and the duration of services have produced remarkably similar outcomes. Nevertheless, the strong effects produced by the few model programs that enrolled children as infants as well as recent research on brain development, have led some experts to suggest that ECE beginning in infancy will likely generate larger effects on children than programs aimed at three or four year-olds. One leading researcher,, in fact, has suggested that ECE starting with infants and continuing to kindergarten may be required to produce lasting effects on IQ.

In terms of program duration, some researchers maintain that at least two years of intervention are necessary for children to benefit from preschool. In fact, most of the longitudinal studies of model programs support this

contention as minimal effects have been demonstrated for preschool programs lasting less than two-years. Beyond two-years, however, no hard conclusions can be drawn. For example, there is little scientific support for the argument that prolonged interventions, which continue during a child's first few years of elementary school, are needed to prevent a "fade-out" in cognitive gains. Despite the appeal of this view, controlled studies comparing ECE alone and ECE plus school-age services, have shown the school-age programs to be largely ineffective; substantial benefits on IQ, achievement, and school progress were produced by ECE alone.

Intensity Of Services

Similar to onset and duration of services, there is little evidence on the ideal intensity of ECE programs. Short-term and long-term benefits have been found for programs that provide half-day services during the school year, and for programs that offer full-day, year-round services. Likewise, similar effects have been demonstrated for programs that vary in the intensity of supplemental home visits, with strong benefits being found for programs that offer weekly, bi-weekly, or

monthly home visits, and for programs that offer no home visits at all.

Because differences in intensity levels have seldom been examined in a controlled setting — where other factors, which might affect outcomes are held constant, e.g., class size, teacher training, and teaching practices — it is difficult to reach firm conclusions about optimal service intensity. Many researchers, however, believe that a minimal threshold — i.e., at least 12.5 hours a week — is necessary to make a difference in children's development. Further study is needed to better understand what the optimum threshold might be.

Parent Involvement

As reported in Part I of the *ECE Balanced View*, programs for parents alone do not influence child outcomes as strongly as programs directed at children. At the same time, researchers acknowledge that the most effective preschool programs combine child-focused center services with significant parent involvement. For example most of the model programs studied, involved parents through weekly or bi-weekly home visits, classroom participation, or parent group meetings. Thus, while parent involvement may not be sufficient to

produce long-term benefits for children, it is certainly an important, if not necessary, contributor of program success.

In summary, the research suggests that high quality ECE programs are characterized by,

- small classes and low child-staff ratios, preferably 1 adult for every 7 children,
- curricula and instruction that engage children as active learners,
- well-trained teachers and ongoing staff supervision and training,
- a minimum threshold of program exposure, on the order of 2.5 hours a day, 5 days a week (more hours per day/week would not substantially increase program effects), and
- substantial outreach to parents through home visits, group meetings, and classroom participation.

In addition, research indicates that a variety of curricular models can be beneficial for preschool children, and that at least two-years of intervention are necessary to produce effects. There is minimal evidence, however,

that the gains achieved in ECE can be sustained and enhanced if continued support is offered during the early elementary school years.

What Does Quality Cost?

Model ECE programs are generally funded at a higher level than typical preschool programs operated by communities across the United States. For example, high-quality interventions such as the *Perry Preschool Project* – which combined comprehensive center-based services with weekly home visits, and which yielded many of the outcomes discussed above – cost just over \$12,000 per family (in current dollars). Similar, if not higher, cost figures have been reported for other exemplary ECE programs. By contrast, large-scale ECE initiatives such as *Head Start* and typical state-funded preschool efforts, usually cost under \$4,000 per child per year.

Thus, to capture the kind of quality intrinsic to model ECE programs, the amount spent on public ECE would have to triple. Realistically that cost could be as high as \$25 to

\$30 billion per year, if all children in need were served.

10 Model ECE Programs

- **Carolina Abecedarian, University of North Carolina, NC**
- **Early Training Project Murfreesboro, TN**
- **Harlem Training Project New York, NY**
- **Houston Parent Child Development Center Houston, TX**
- **Infant Health and Development Program, Robert Wood Johnson Foundation, NJ**
- **Milwaukee Project Milwaukee, WI**
- **Perry Preschool Project Ypsilanti, MI**
- **Philadelphia Project Philadelphia, PA**
- **Syracuse Family Development Program Syracuse University, NY**
- **Yale Child Development Research Program New Haven, CT**