This literature review summarizes information related to the major models of providing education, child care, and family-oriented services to an early childhood population, the effectiveness of these models, and strategies for delivering early childhood services for children with special needs. The focus of the review is on information presented within the past 30 years on center-based programs serving toddlers and preschoolers and their families, with an emphasis on analyzing information collected in the 1990s. Information for the review was collected from computerized bibliographic databases, relevant journal contents, and Internet resources. The review begins with a general discussion of features of high quality early childhood programs and factors that influence parent satisfaction with these programs. Second, a review of child-focused and family-focused approaches to early childhood is presented, including an analysis of the short- and long-term effectiveness of these models. Third, issues related to providing care for children with special needs are presented. The review concludes with recommendations regarding: (1) addressing the needs of the target population; (2) service intensity, onset, and duration; (3) general features of program quality; (4) child-focused and/or family-focused services; (5) provision of mental health services; and (6) appropriate program goals. A list of model programs is appended. (Contains approximately 550 references.) (KB)
Early Childhood Education Programs

A review of program models and effectiveness

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Background

Purpose of this review/description of search

This literature review summarizes information related to the major models of providing education, child care, and family-oriented services to an early childhood population, the effectiveness of these models, and strategies for delivering early childhood services for children with special needs. Due to the extremely high number of journal articles, books, and reports dealing with these issues, it was not possible to thoroughly review the literature in this area. Instead, an effort was made to identify existing reviews and representative studies.

Several guidelines were followed in an effort to target the scope of this review. While some of the materials read provided comparisons of center-based and home-based child care, only materials dealing with children in centers were systematically reviewed. Similarly, the age range of the children under study was restricted. While some of the materials that are included explored infant and school-aged child care, the primary focus of this review is on toddlers and preschoolers in early childhood programs. Finally, rather than review all of the work that has been conducted in this area, the time period of interest was narrowed. The work included in this document and cited in the references broadly cover the last 30 years. However, the focus was placed on analyzing information collected between 1990 and 1999.

To obtain the information for this review, a number of computerized bibliographic searches were conducted. Several different bibliographic databases were used, including Educational Resources Information Center (ERIC), Educational Abstracts, PSYC-Info, and PSYC-First. In addition, the tables of contents of several journals were systematically reviewed to identify additional articles. These journals included Child Development, Developmental Psychology, Young Children, Early Childhood Development and Care, Topics in Early Childhood Special Education, Early Childhood Education Journal, Dimensions of Early Childhood, Early Childhood Research Quarterly, and Early Education and Development.

Internet resources were also used to obtain additional information. Web sites of organizations interested in child care and early childhood education were reviewed to obtain reports and other resources. These organizations/web sites included the National Network for Child Care, the National Association for the Education of Young Children, the National Child Care Information Center, the Center for the Child Care Workforce, the Child Care Action Campaign, the Child Care Institute of America, the Children's Defense Fund, the Child Welfare League of America, the National Child Care Association, and the Educational Resources Information Center (ERIC) Clearinghouse on Elementary and Early Childhood Education.
Overview of paper

This literature review begins with a general discussion of features of high quality early childhood programs and factors that influence parent satisfaction with these programs. Second, a review of child-focused and family-focused approaches to early childhood programs is presented, including an analysis of the short-term and long-term effectiveness of these models. Third, issues related to providing care for children with special needs are presented. Following a conclusion and recommendations section, two appendices are included. The first appendix contains a list of selected program models that have been studied. The second appendix consists of an extensive bibliography of related information sources. This appendix includes all works cited in this review, in addition to other relevant materials.

General features of high-quality programs

The first section of this review summarizes information related to general features of high-quality early childhood programs. Child care quality can be defined as “experiences that enhance rather than impede children’s social, cognitive, and emotional development” (Howes, 1997, p. 405). Five program features have generally been described as promoting quality: class size and student-teacher ratios, appropriate curriculum, adequate staff training, responsive caregiving, and staff stability. These five features are briefly summarized below.

A thorough discussion of these features is not included in this document as reviews of the literature in these areas are readily available. They are presented in order to provide a context for the material that follows regarding outcomes associated with various program models. Within service delivery models, variation in these features have been associated with differing program outcomes and effectiveness (e.g., Belsky, 1988; Burchinal, Roberts, Nabors & Bryant, 1996; Goelman & Pence, 1987; Hausfather, Toharia, LaRoche & Engelsmann, 1997; Howes & Hamilton, 1993; Lamb, 1996; McCartney, 1984; NICHD Early Child Care Research Network, 1997; Peisner-Feinberg & Burchinal, 1997; Phillips et al., 1987; Wasik et al., 1990). This relationship between quality of care and outcomes for children has been found to exist independently of other factors, including socioeconomic status, maternal education and family structure (Dunn, 1993; Phillips, McCartney & Scarr, 1987; Schliecker, White, & Jacobs, 1991; Whitebook, Howes & Phillips, 1989).

These five features are especially important to consider in light of research that suggests that, regardless of the type of child care setting (i.e., centers, relative care, family day care), many children receive low-quality care. One large-scale study (the National Child Care Staffing Study) reported that the quality was poor in over half of the centers studied (Whitebook, Howes, & Phillips, 1990). In a more recent study of cost, quality and child
outcomes in child care centers, it was reported that only 14 percent of centers could be regarded as providing good quality care. Most centers were rated as poor to mediocre, with almost half of all young children in centers that are less than minimal in quality (Helburn et al., 1995; Phillipsen, Burchinal, Howes, & Cryer, 1996).

These general indicators of high-quality programs may be particularly important for children from low-income families. Research has found that children from low-income families receive greater benefits from high quality care than children from more advantaged homes (McGurk et al., 1993; Ramey, Bryant & Suarez, 1989; Scarr & Eisenberg, 1993). Low-quality care is often correlated with family characteristics and demographic criteria (i.e., low-income families are more likely to be limited to less costly and poorer quality care). Unfortunately, fewer low-income than high-income children are enrolled in high-quality programs, resulting in a “two-tiered system of care for our youngest children” (Chorvinsky, 1982). In other words, those children who can benefit the most are also the least likely to receive high quality child care (Scarr & Eisenberg, 1993).

Class size and ratios

Numerous studies and reviews have concluded that high quality in child-focused programs means small classes and high staff-to-child ratios (Allhusen, 1992; Barnett, 1995; Bredekamp, 1990; Clarke-Stewart, 1987; Frede, 1995; Hayes, Palmer, & Zaslow, 1990; Helburn et al., 1995; Howes, 1982, 1997; Howes & Rubenstein, 1985; Kontos & Fiene, 1987; Phillips & Howes, 1987; Stith & Davis, 1984; Weikart, 1989; Whitebook, Howes & Phillips, 1989; Yoshikawa, 1995). When child-adult ratios and group sizes are smaller, caregivers tend to have more positive interactions with preschoolers (Howes et al., 1992; Phillips, 1987; Ruopp, Travers, Glantz & Coelen, 1979; Vandell & Powers, 1983). The actual number of children included in staff-to-child ratios is dependent on a number of factors, including the age of the child and the guidelines established by different licensing agencies, so it is difficult to provide any useful figures to use as a reference. However, the research has consistently found that programs that at least meet, but preferably our lower, than the required ratios show enhanced outcomes. In one study, it was found that the addition of even one child to a group made a meaningful difference in quality (Howes et al., 1992).

Curriculum

A second characteristic of effective early childhood programs is a child-centered, developmentally-appropriate curriculum (Bredekamp, 1990, 1993; Phillips & Howes, 1987; Weikart, 1989; Whitebook, Howes & Phillips, 1989). According to a review of effective programs conducted by Frede (1995), curricula should engage children as active learners and be coordinated with activities children are likely to encounter when they enter school.
Dodge (1995) presented characteristics of effective curriculum frameworks. She suggests that curricula should have a developmentally-appropriate philosophy that is guided by an understanding of both the normal growth sequences typical of children within a given age group and the individual variations that exist in temperament, interests, learning styles and cultural backgrounds. It is also important to have a statement of goals and objectives that addresses the developmental aspects of the whole child, including social, emotional, cognitive and physical development (Bredekamp, 1987; Bredekamp & Rosegrant, 1992; Copple, 1991; Dodge, 1995, Dodge & Colker, 1992; Dodge & Phinney, 1990).

**Staff training**

Among the most important features of a high-quality program is adequate training for all program staff. Staff should be trained in early childhood education or child development (Bredekamp, 1990; Clarke-Stewart, 1987; Howes, 1983, 1987, 1997; Howes & Olenick, 1986; Lamb, 1996; Phillips & Howes, 1987; Rosenthal, 1991; Ruopp, Travers, Glantz & Coelen, 1979; Vandell & Powers, 1983; Weikart, 1989; Whitebook, Howes, & Phillips, 1989). This training may take the form of formal education as well as specialized training.

Nationally, only 47 percent of teachers in centers have college degrees (Willer et al., 1991). Many teachers (74% in one study) reported having "some college," though this might be as little as one course (Whitebook, Howes, & Phillips, 1989). Another study reported that 14 percent have no formal training beyond a high school diploma (Willer et al., 1991). Several studies have reported that caregivers' level of formal education (independent of years of experience) was the strongest predictor of teacher-child interaction (Fischer & Krause-Eheart, 1991; Howes, Whitebook & Phillips, 1992). There is also evidence that the proportion of highly educated staff is declining (Helburn, 1995; Whitbook et al., 1990).

Specialized training includes other training relevant to practitioners' work with young children. Often, this training takes the form of brief workshops or inservice sessions conducted at their place of employment or in their community. A 1991 study reported that while most teachers do complete some specialized education, on average they receive only about ten hours of training (Kisker, Hofferth, Phillips, & Farquhar, 1991).

Research has indicated that when caregivers have more formal education and specialized training, they interact more positively with preschoolers (Arnett, 1989; Berk, 1985; Ruopp, Travers, Glantz & Coelen, 1979). They are also more likely to be responsive to the individual needs of children and knowledgeable about creating an environment that is conducive to optimal growth and development (Ruopp, Travers, Glantz & Coelen, 1979).
A number of studies have addressed institutional barriers that may inhibit training (Morgan et al., 1993). A 1991 report resulting from a national meeting convened by the Carnegie Corporation of New York and the Rockefeller Brothers Fund identified some of these barriers, including: the high cost of classes, the difficulty of attending training while juggling full-time jobs and families; lack of access to training for people of color and low-income individuals; training that does not respond to practitioners’ needs; and training that does not earn college credits, making it difficult to apply to future college study (Copple, 1991; Morgan et al., 1993). Other barriers include a lack of training that addresses the skill and knowledge level of practitioners and a lack of incentive for training since it does not usually lead to increased compensation (Brown, Costley & Morgan, 1990; Whitebook, Howes, & Phillips, 1989).

**Responsive caregiving**

Sensitive caregiving is an additional feature of high-quality programs. Specifically, caregiving should be responsive, involved, and affectionate (Anderson, Nagel, Roberts, & Smith, 1981; Bredekamp, 1990; Carnegie Corporation of New York, 1994; Clarke-Stewart, 1987; Holloway & Reichhart-Erickson, 1989; Howes, 1987; Howes et al., 1992; Lamb, 1996; Phillips & Howes, 1987; Weikart, 1989; Whitebook, Howes, & Phillips, 1989). In addition to playing an important role in determining the outcomes for children, the quality of interactions with children is one source of job satisfaction among child day care workers (Kingsley & Cook-Hatala, 1988; McClelland, 1986).

**Staff stability**

Finally, staff stability is a critical issue in program quality (Davis & Thornburg, 1994; Hayes, Palmer & Zaslow, 1990; Howes, 1987; Howes, Rodning, Galluzzo, & Myers, 1988; Kontos & Fiene, 1987; Lamb, 1996; Phillips & Howes, 1987; Whitebook, Howes, & Phillips, 1989). In low quality facilities, staff turnover often exceeds 40 percent (Kisker, Hofferth, Phillips, & Farquhar, 1991; Whitebook et al., 1990). The rates of turnover for staff in early childhood programs is dramatically higher than the annual rate of 9.6 percent reported by U.S. companies and the 5.6 percent rate for public school teachers (Whitebook, Howes, & Phillips, 1993).

Low stability of caregivers has been found to have negative effects on children (e.g., Hayes, Palmer, & Zaslow, 1990). Staff stability is especially important when infants and young children are being served due to the importance of allowing children to get to know and become familiar with the caregivers (Phillips, 1987; Zigler & Finn-Stevenson, 1995). Research has found that infants and toddlers display more appropriate social behaviors in stable care arrangements (Howes & Stewart, 1987; Suwalsky et al., 1986).

Staff turnover has been associated with the lack of job prestige and salary (Shiomi, 1990; Whitebook et al., 1991). Wages have been found to be related to job satisfaction among
center-based child day care workers (Mullis, Ellet, & Mullis, 1986; Phillips et al., 1991). In a survey of child care workers conducted by Whitebook and colleagues (1989), only 43 percent of the workers earned more than $5.00 per hour, even though their educational levels were higher than those of the average American worker. Annual staff turnover among these workers was 41 percent and was directly related to low salaries. More recent data indicate that over 50 percent of Minnesota child care workers earn less than $6.99 per hour (Alliance of Early Childhood Professionals, 1996). When adjusted for inflation, the average wage of teachers in centers has dropped by almost one-quarter since the 1970s (Kisker, Hofferth, Phillips, & Farquhar, 1991).

Other factors that may influence program effectiveness

Intensity of services

One issue that has been raised in the early childhood education literature is the relative efficacy of full-day and half-day programs. It has been argued that providing a full-day experience to children at-risk may allow greater opportunities for learning and intervention. Research examining this issue has failed to identify any consistent patterns regarding differences between full-day and half-day programs.

A number of recent reviews all conclude that there is little evidence regarding the ideal intensity of early childhood programs (Barnett, 1995; Frede, 1995; Yoshikawa, 1995). Because different service intensity levels have seldom been explained within the context of a single program, it is difficult to determine its influence (Gomby et al., 1995). Examinations of separate full-day and half-day center-based programs have found long-term benefits for both. One explanation for the failure to find consistent differences is that many publicly funded part-day programs can offer richer child development experiences than can the private market's full-day child care programs. For many families, however, the parents' need to work means their children cannot access those enriched programs (U.S. General Accounting Office, 1995).

Several researchers have indicated that a minimum threshold of program intensity is probably necessary to yield benefits. It is not clear, however, where that threshold falls (Gomby et al., 1995).

Onset and duration of services

A key rationale for providing early childhood programs is the idea that intervening sooner is better than intervening later. The strong effects achieved by a few programs that enrolled children as infants, and neurological evidence that the early environment
influences infant brain development, has led several researchers to suggest that beginning services in infancy will likely generate larger effects than waiting until a year before children enter school (Barnett, 1995; Carnegie Corporation, 1994; Yoshikawa, 1995). These ideas lie behind the Head Start Bureau's new initiative, Early Head Start, which serves children from birth to age three (Gomby et al., 1995).

Others argue that, although the accumulating research suggests that early childhood may be a special time, it is not the only age period during which successful interventions can and should be launched (Brim & Kagan, 1980). For example, Head Start programs do show success in influencing cognitive and academic outcomes for children who are often not served until one year before they enter school.

It has also been suggested that continuing programs through children's transition to school may enhance effectiveness. For example, some researchers concluded that the cognitive gains children achieve in early childhood programs can be sustained and enhanced if continued support is offered during the children's first few years in school (Fuerst & Fuerst, 1993; Ramey & Campbell, 1991; Slavin, 1994; Zigler & Styfco, 1993). Barnett (1995), however, argues that the evidence for this conclusion is weak. Efforts such as the Head Start Transition Projects have been launched to ease children's transition from early childhood programs to the schools (Gomby et al., 1995).

A review of early childhood programs conducted by Frede (1995) concluded that effective programs varied in the number of years of treatment they offered, ranging from eight months to more than five years. The variations in intensity across programs were not related to any striking differences in program effect.

Parent involvement

As will be seen later in this review, early childhood programs vary to the extent that services are provided to parents, with some programs offering extensive learning opportunities for parents as well as direct services such as job training. Regardless of the model of early childhood care, parents are an important participant in the process.

Involving parents can be especially important when serving children with special needs. Peterson and Cooper (1989) present a number of premises related to parent involvement in early intervention, which may also apply to children in early childhood education programs. These premises, as adapted by Paget (1992), are as follows:

- Parents (or their substitute caregivers) are the most significant teachers, socializing agents, and caregivers for children during their years from birth to age 5.
- Parents are in a unique, strategic position to enhance or negate the potential benefits of an early intervention program.
Parents can act as key intervention agents in their child’s life and can be primary teachers of the special skills their child needs to acquire.

Parent involvement and education offer a means for parents to build a positive perspective about their child and their position as parents.

Parents of young children with handicapping or at-risk conditions often face additional caregiving demands and stresses that demand new coping skills and parenting skills and may tax their emotional and coping systems.

The success of early intervention services and the duration of those benefits are directly related to the degree to which parents are part of the intervention process.

Intervention works best when parents and professionals are collaborating and working together toward common goals for a child.

Involving parents by educating them and helping them build new skills for dealing with their child’s special needs from the onset has obvious economic benefits.

Involvement brings parents into contact with a variety of resources (caring people, agencies, materials, information, professionals) that they can draw upon to aid them in their parenting roles.

Parent education and involvement are advantageous simply because a great many parents are eager during their child’s early life to be good parents, to nurture their child, and they are often not willing to relinquish control over a child so young to others.

Parent education and involvement foster parent and community support for early referral to early intervention programs.

Research has found that the most effective early childhood programs are those that involve children’s families in meaningful ways (Dodge, 1995). When involving parents in early childhood services, it is important to avoid a “deficit model” for their involvement, in which a hierarchy is established between parent and professional roles, with professionals holding a superior position to parents (Dunst et al., 1988; Paget, 1992; Wiegerink & Comfort, 1987).
Parent satisfaction with early childhood programs

Most parents report that they are satisfied with their children’s day care or educational program (Bogat & Gensheimer, 1986; Britner & Phillips, 1995; Shinn et al., 1991). For example, 96 percent of parents in the 1990 National Child Care Survey reported that they were satisfied with the arrangements they had made for their children (Hofferth, Brayfield, Deich, & Holcomb, 1991). This general finding applies across types of care, qualities of care and regions of the United States (Mitchell, Cooperstein, & Lamer, 1992).

Several studies have attempted to find relationships between satisfaction and specific aspects of the care environment. One study found that overall satisfaction was associated with the child’s experience (e.g., provider’s warmth, daily activities, and opportunities for learning), the facility’s attributes (e.g., amount of space, security and safety), low teacher turnover, and the quality of their own interactions with the teachers. “Adult” concerns, such as cost, location, hours and rules did not affect satisfaction (Mitchell, Cooperstein, & Lamer, 1992).

It is interesting to note that parent satisfaction is typically unrelated to the elements of quality discussed earlier. While they may play a role in determining the actual outcomes for children, features such as group size, staff-child ratio, and provider training have not been associated with parent satisfaction (Britner & Phillips, 1995; Shinn et al., 1991).

Parent satisfaction may also be related to their own involvement in the care program. Parents’ satisfaction has been associated with their perception of the program as a source of social support for themselves (Britner & Phillips, 1995; Garbarino, 1982). Satisfaction has also been associated with their frequency of communication with the staff and their intensity of involvement (Kontos & Dunn, 1989, Zigler & Turner, 1982).

Program models and outcomes: cautionary notes

Classification of models

One of the difficulties inherent in summarizing the research related to early childhood programs relates to the wide variety of service delivery options and to (often) inconsistent use of labels to describe these programs. Early childhood programs are often discussed collectively, however, they represent a “polyglot array of disjointed programs” (Kagan, 1991, p. 239) with a wide variety of goals, service delivery strategies, and ages of children served (Gomby et al., 1995).
Early childhood programs can broadly be divided into two categories: child focused programs and family-focused programs. While one of the goals of child-focused programs may be to free parents from child care responsibilities so that they can work or attend school, the primary goals of these programs are to promote child development and to improve children’s readiness to succeed in school (Gomby et al., 1995). Child-focused programs include preschool, Head Start, pre-kindergarten and child care programs. Family-focused programs are intended to meet the needs of both the children and the parents. In this review, family support programs, two-generation programs, and 21st Century Schools are included as representatives of family-focused programs.

**Short-term versus long-term outcomes**

This review will explore both short-term and long-term outcomes. While long-term benefits of early childhood programs would illustrate sustained effects of services, there are several limitations to consider. First, of the tens of thousands of studies that have explored the impact of early childhood services, relatively few have focused on long-term outcomes. Thus, there is a small number of program evaluations that are available for review. In particular, it is difficult to find long-term studies that utilize rigorous experimental methods. Some studies have used random assignment to treatment and control groups, with long-term follow-up for both groups. Other studies, however, do not adhere to this standard of methodology, resulting in more tentative conclusions regarding their findings.

A second limitation of long-term studies addresses the possible confounding factor of time. Because it takes at least 15 years for a group of three-year-olds to complete high school, evidence of long-term effects that last into adolescence or early adulthood is only available from programs that operated more than 20 years ago. It has been argued that “changing times can make [these studies] anachronisms before the ink is dry on the latest round of results” (Gomby et al., 1995, p. 18). It is unclear whether programs that were successful 20 or 30 years ago would show the same results today.

**Child-focused models**

**Key features of models**

Child-focused programs can be generally divided into two categories: educational programs and child care programs (Gomby et al., 1995). Educational programs include preschool, Head Start, and pre-kindergarten programs. They are typically part-day and part-year programs serving groups of three-to-five year olds in centers or schools. In addition to an educational component, many of these programs include health and developmental screenings, parent involvement and social service assistance. Child care programs typically offer care on a full-day basis to children from birth to school age. The
The conceptual underpinning of these programs is that they lead to greater school success, greater economic gain, and heightened social responsibility (Berrueta-Clement et al., 1984; St. Pierre, Layzer & Barnes, 1995).

Tremendous variation exists within these programs in terms of the types of services that are provided. Similarly, these programs exist in a wide range of settings serving a diverse population of children. While consistent patterns that emerge regarding these factors will be highlighted, it is beyond the scope of this review to thoroughly discuss variations in outcomes based on the many differences that exist within these programs. Instead, general statements will be made regarding the effectiveness of child-focused programming as a collective group.

**Outcomes for children**

The effectiveness of child-focused early childhood programs is generally determined by assessing their impact on the children that are served. The most common outcomes explored concern the cognitive development and academic performance of the children. In addition to measuring cognitive effects, many programs measure social outcomes. In some studies, effects of the programs on health outcomes are also considered. These three categories of outcomes will be discussed separately.

**Cognitive and academic outcomes**

A number of cognitive and academic benefits have been associated with early childhood education and care, including increases in measured intelligence, cognitive skills, language development, and academic success. Several consistent patterns have emerged regarding these findings.

First, as stated earlier, dimensions of general program quality (i.e., group size and staff-child ratio, responsive caregiving) have been associated with variation in the short-term and long-term outcomes for children in early childhood programs (e.g., Bryant, Burchinal, Lau, & Sparling, 1994; Goelman & Pence, 1987; Peterson & Peterson, 1986; Phillips et al., 1987; Schliecker et al., 1991). Cognitive outcomes have been especially variable depending upon the quality of the program. The outcomes described below generally assume the presence of high-quality care. In a number of studies, low-quality programs have been associated with poorer performance in cognitive areas (e.g., Scarr & Eisenberg, 1993).

Similarly, these results are typically stronger for center-based programs and for programs that include an educational component (Clarke-Stewart, 1989). Programs that provide structured opportunities for exploration and learning show greater influences on cognitive outcomes. For cognitive interventions, the more intensive the program, the better the results (Ramey & Ramey, 1992).
The impact of early childhood care and education programs is also dependent upon the characteristics of the children being served. Sustained results are generally more positive for children from low-income and disadvantaged families (Burchinal, Lee, & Ramey, 1989; Caughy, DiPietro, & Strobino, 1994; Clarke-Stewart, 1989; Field, 1991; Lally, Mangione, & Honig, 1988; Lazar, Darlington, Murray, Royce & Snipper, 1982; Lee, Brooks-Gunn, Schnur & Liaw, 1990; Phillips et al., 1987; Ramey, Bryant, Sparling & Wasik, 1985; Ramey & Campbell, 1992; Ramey & Ramey, 1992; Ramey, Yeates, & Short, 1984). These results have generally not been found for middle-class children (Baydar & Brooks-Gunn, 1991; Burchinal, Ramey, Reid & Jaccard, 1995; Clarke-Stewart, 1989; Desai, Chose-Lansdale, & Michael., 1985). The results are also more dramatic for children with poor learning opportunities at home (McCartney, Scarr, Phillips, & Grajek, 1985).

It is not clear whether age of entry influences these cognitive outcomes. Some research has not found differences based on the onset or duration of care (Bolger & Scarr, 1995). Other studies have found significant differences, however, concluding that earlier age into care was associated with better school performance (Anastasiow, 1984; Andersson, 1989; Hartmann, 1995).

Finally, while short-term effects on cognitive measures are common, fewer studies show long-term change. Some research has found that continued specialized programs and transition services may help to maintain the gains (e.g., Weikart, Bond, & McNeil, 1978). However, it has also been argued that many of the children who are in particular need of early intervention, such as children who attend Head Start programs, may also be the most likely to attend low-quality schools (Lee & Loeb, 1995). Simply providing supportive transition services without altering the schools will most likely not be successful in promoting long-change. Instead, interventions that help to change the school environment or to increase parent involvement may be more successful (Fuerst & Fuerst, 1993).

Intelligence/IQ

Research has generally indicated that participation in child-focused early childhood programs can result in IQ gains of about eight points immediately after completion of the program (Berrueta-Clement et al., 1984; Burchinal, Lee & Ramey, 1989; Clarke & Fein, 1983; Copple, Cline & Smith, 1987; Davis & Thornburg, 1994; Lally, Mangione, & Honig, 1988; Lazar, Darlington, Murray, Royce & Snipper, 1982; Lee, Brooks-Gunn, Schur & Liu, 1990; McKey et al., 1985; Miller & Bizzell, 1984; Thornburg, Pearl, Crompton, & Ispa, 1990). The IQ advantage that the children who attended the early childhood program have over those in control groups usually persists until they enter school. However, the difference typically diminishes as they progress through the early grades, as the IQ scores of participating children slightly drop and the scores of the
control children slightly rise (Ceci, 1991; Cicirelli, 1969; Gomby et al., 1995; Lazar et al., 1982).

The reliance of many early childhood program evaluations on IQ scores and the consistent finding that IQ benefits diminish over time have been controversial. The “fade-out” phenomenon has led some to question the utility of these programs (Herrnstein & Murray, 1994; Locurto, 1991). Others argue that relying on IQ is shortsighted and that other cognitive outcomes may be more important.

**Cognitive and language skills**

Studies of early childhood programs consistently find that benefits do go beyond IQ. Short-term effects of child care on cognition include higher scores on cognitive competency measures and an enhanced pattern and level of cognitive development (Burchinal et al., 1990; Copple, Cline & Smith; 1987; McKey et al., 1985). Research has found early childhood care to be related to significantly better language development and mathematical skills (Barnett, 1998; Bryant, Burchinal, Lau & Sparling, 1994; Goelman & Pence, 1987; McCartney, 1984; NICHD, 1997; Peisner-Feinberg & Burchinal, 1997; Peterson & Peterson, 1986; Phillips et al., 1987; Ramey & Farran, 1982; Schliecker, White, & Jacobs, 1991). Some research has suggested that cognitive and language skill benefits may also disappear over time, however, the results were maintained in programs with an intensive educational component and in programs that involved parents (Campbell & Taylor, 1996).

**School success**

According to a review conducted by Davis and Thornburg (1994), children who receive child care are better prepared for entry into school (Berreuta-Clement et al., 1987; Houlares & Oden, 1990; Weikart, 1990). Long-term effects for disadvantaged children include fewer grade retentions, reduced placement into special education classes, more regular attendance at school, higher scholastic achievement, and greater motivation and commitment to school (Berreuta-Clement et al., 1984; Boocock, 1995; Campbell & Ramey, 1993; Consortium for Longitudinal Studies, 1983; Copple, Cline & Smith, 1987; Davis & Thornburg, 1994; Doherty, 1991; Ershler, 1992; Gray, Ramsey & Klaus, 1983; Harrell, R., 1983; Lally, Mangione, & Honig, 1988; Lazar et al., 1983; McCartney, Scarr, Phillips, & Grajek, 1985; McKey et al., 1985; Palmer & Siegle, 1977; Schweinhart & Weikart, 1993; Wasik, Ramey, Bryant, & Sparling, 1990; Weikart, 1989).

Very few studies have followed children until age 18. Those that do, however, find that disadvantaged children who attend early childhood programs are more likely to graduate from high school (Davis & Thornburg, 1994; Gomby et al., 1995; Royce, Darlington, & Murray, 1983). They also show higher rates of employment and post-secondary education enrollment after graduation (Davis & Thornburg, 1994; Weikart et al., 1984).
Explanations for cognitive outcomes

Researchers have described two mechanisms to explain how children's experiences at ages three and four might lead to changes that alter the course of their school careers (Gomby et al., 1995). The first explanation emphasizes changes in children's cognitive abilities (Schweinhart, Barnes & Weikart, 1993). In this view, preschool improves children's ability to think and reason as they enter school, enabling them to learn more in the early grades. Even if their IQ advantage fades, their learning accumulates and their academic success keeps them "on track" toward high school graduation. The second explanation, which has stronger empirical support, begins with the same cognitive advantage, but emphasizes the child's increased motivation and the support provided by parents and teachers once their expectations for the child's success in school rise (Woodhead, 1988).

Social and emotional outcomes

Much of the research examining social outcomes has searched for negative effects, reflecting concerns that young children may not fare as well emotionally in large groups as they do in the more intimate surroundings of their homes (Gomby et al., 1995). Recent studies of the short-term effects of child care have shown that poor quality programs do have negative effects on children's play and friendship with their caregivers (Galinsky, Howes, Kontos, & Shinn, 1994; Helburn, 1995).

Quality care, on the other hand, has been associated with a wide variety of positive social outcomes. Children with involved and responsible caregivers are rated as more sociable and considerate, display more exploratory behaviors, engage in more complex play, are better adjusted, and have better peer relations (Anderson, Nagel, Roberts & Smith, 1981; Balleyguier, Meudec & Chasseigne, 1991; Clarke-Stewart, 1987; Holloway & Reichhart-Erickson, 1989; Howes & Olenick, 1986; Howes, et al., 1992; Kontos, 1991; Peisner-Feinberg, & Burchinal, 1997; Phillips, McCartney & Scarr, 1987; Ramey et al., 1983; Scarr & Eisenberg, 1993). A number of studies have indicated that these results are more positive for children who spend more time in care and for children who entered care earlier (Field et al. 1988; Scarr & Eisenberg, 1993).

One social outcome that has received special attention is aggression. Several studies have found that even children in high quality center-based programs behave more aggressively than other children when they begin school, but these differences most often disappear or are reversed later in life (Barnett, 1995).

In fact, a number of longitudinal studies have reported that participation in early childhood programs is associated with reduced levels of juvenile and adult crime (Weikart et al., 1984; Yoshikawa, 1995). A recent review of the literature in this area indicates that these effects are the strongest for model programs which combine center-
based child-development services with home visits or other parent-oriented components (Yoshikawa, 1995).

**Health outcomes**

Early childhood programs can positively affect children’s physical health by requiring that children be properly immunized, by linking them to health services, by conducting vision, hearing and developmental screenings and by providing them with nutritious meals (Zigler, Piotrowski & Collins, 1994). These possible positive health benefits of early childhood programs are reflected in a campaign recently launched by the federal Child Care Bureau and the Maternal and Child Health Bureau to strengthen linkages between health care providers and child care centers (Gomby et al., 1995). Some of the health benefits that have been reported include better nutrition, reduced accidents, better dental care, and higher immunization rates (Campbell & Taylor, 1996; McKey et al., 1985; Olds, 1988).

**Outcomes for parents**

Although most studies of child-focused programs assess only the effects on children, some programs measure both child and parent outcomes (Benasich, Brooks-Gunn, & Clewell, 1992). According to Yoshikawa (1995), effects of child-centered programs on parents are mixed. Some programs influenced parents’ expectations for their children or helped mothers to interact with their children in a warmer or most positive fashion or to rearrange their home to provide learning opportunities for their children. Other programs did not have these benefits, however.

**Family-focused models**

As described earlier in this report, parent involvement in early childhood has been associated with improved outcomes for children. A wide range of programs have been implemented that focus exclusively on parents. These parent-focused programs seek to affect children indirectly, by helping parents learn to care for their children in ways that will promote the children's development (St. Pierre, Layzer, & Barnes, 1995). For example, many of these programs provide parenting education and job training. These models will not be addressed in detail in this review, as they do not include an early childhood component.

Of greater interest in this review are family-focused programs, which are designed to strengthen outcomes for children by providing services to the entire family unit. There has been widespread social and political support for this approach. For example Public Law 99-457 advocates the “implementation of family-focused intervention services that address children’s developmental needs by, in part, maximizing the effectiveness of their
families” (Mahoney, O’Sullivan, & Dennebaum, 1990, p. 2). Turnbull and Summers (1987) have described the movement towards this family-oriented approach as a “revolution.”

Providing services to the entire family is considered to be especially important when serving children who are at-risk or who have special needs. For example, parents who are experiencing poverty may be faced with a number of other pressures and needs. Children with special physical, behavioral, or emotional needs may also disrupt family functioning, decrease parental effectiveness, and increase parental stress (Beckman-Bell, 1981; Crnic, Friedrich, & Greenberg, 1982; Dyson & Fewell, 1986; Mahoney, O’Sullivan & Dennebaum, 1990; Paget, 1992).

In this review, three models for providing family-focused services will be presented. These models include family support programs, two-generation programs, and 21st Century Schools programs.

**Family support programs**

**Description of model**

Federal legislation defines family support services as “primarily community-based, preventive activities designed to alleviate stress and promote parental competencies and behaviors that increase the ability of families to successfully nurture their children; enable families to use other resources and opportunities available in the community; and create supportive networks to enhance child-rearing abilities of parents and help compensate for the increased social isolation and vulnerability of families (Children’s Bureau, 1994). These services are generally preventative, voluntary, and have no eligibility requirements (Roditti, 1995).

Family support programs typically serve children under the age of three (though older children may also be included) through weekly or monthly home visits or through classes or drop-in centers for parents. These programs strive to involve parents in their children’s development and to strengthen their parenting skills, with the hope that changes in the parents will help to create, sustain, and amplify positive results for the children (Gomby et al., 1995).

A variety of philosophical models may underlie family support programs. Paget (1992) summarizes three approaches to family support programs. The first approach designs interventions based upon the family’s needs and strengths. This approach emphasizes comprehensive child and family assessments that are used to identify the family’s needs and to create individualized intervention goals designed to enhance family strength and empowerment (Bailey, et al., 1986; Deal, Dunst, & Trivette, 1989; Dunst, Trivette, & Deal, 1988). The second model emphasizes designing interventions based upon the
family's values regarding the level and scope of intervention, costs and efficiency and acceptability (Hobbs et al., 1984).

The third model focuses on the provision of services designed to enhance family functioning. Mahoney and colleagues (1990) have described a model of family-focused intervention that includes the following categories of services: (1) assistance and information that helps engage parents in the early intervention system; (2) information about the child’s needs and health; (3) information and assistance for working with the child; (4) personal and family assistance, including counseling and social activities; and (5) resource assistance to help families obtain medical, financial, respite and other community resources to help them care for their child.

**Integrating family support into early childhood programs**

Family support programs may or may not include a child care or early childhood component. However, a number of authors have argued that early childhood programs allow unique opportunities to provide support to families (Raab & Dunst, 1997; Roditti, 1995). One source of support is the actual provision of early childhood care. Powell (1987) suggested that ensuring high quality care for children is one of the most important ways that early childhood programs can be supportive to families. A positive relationship between the parent and the caregiver is another source of support (Galinsky, 1990).

In addition, it has been proposed that these programs may have strong opportunities to link parents with other sources of support while children are still young (Roditti, 1995). For example, Bernice Weissbourd (1992) has proposed a vision of family-centered child care programs that “utilize the high-quality program they provide for children to act as a hub around which programs for parents and families may revolve and through which relationships among parents and between parents and staff members are established and maintained” (p. 390). Similarly, a report of a meeting on family support convened by the Carnegie Corporation of New York concluded that child care programs should be strong contributors to family support programs (Shore, 1994).

One reason why early childhood programs may be ideal for providing family support is that many of their underlying principles and premises may be consistent. For example, the Children’s Bureau (1994) has outlined guiding principles for family support programs. According to Roditti (1995), these principles are based on a strengths perspective (rather than a deficit or pathological model), are family focused, and fit with the philosophy of quality child day care and development programs. These principles include the following six points:

- The welfare and safety of children and all family members must be maintained while strengthening and preserving the family whenever possible. Supporting families is the best way of promoting children’s healthy development.
Services focus on the family as a whole, looking towards identifying, enhancing and respecting family strengths as opposed to focusing on family deficits or dysfunctions. Service providers work with families as partners in identifying and meeting individual and family needs.

Services are easily accessible (often delivered in the home or in community-based settings, using schedules convenient for parents) and are delivered in a manner that respects cultural and community differences.

Services are flexible and responsive to real family needs. Linkages to a wide variety of supports and services outside the child welfare system (e.g., housing, substance abuse treatment, mental health, job training, child care) are generally crucial to meeting families’ and childrens’ needs.

Services are community-based and involve community organizations and residents (including parents) in their design and delivery.

Services are intensive enough to meet family needs and keep children safe. The level of intensity necessary to achieve these goals may vary greatly between preventive (family support) and crisis services.

A second model of family support principles has been presented by the Family Resource Coalition (Goetz, 1992; Family Resource Coalition, 1996). These principles include partnerships, empowerment, cultural competence, and building parenting strengths. Raab and Dunst (1997) conducted a content analysis of these multidimensional principles to clarify the features that could be used in integrating quality family practices in early childhood programs. Figure 1 summarizes the results of their content analysis.
1. **DIMENSION OF FOUR FAMILY SUPPORT PRINCIPLES**

<table>
<thead>
<tr>
<th>Principle</th>
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<tbody>
<tr>
<td><strong>Partnership relationship</strong></td>
<td>• Relationships are based on equality</td>
</tr>
<tr>
<td></td>
<td>• Relationships are based on respect</td>
</tr>
<tr>
<td></td>
<td>• Program establishes and maintains collaborative relationships with parents</td>
</tr>
<tr>
<td></td>
<td>• Partnerships are the basis for promoting growth and change</td>
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<tr>
<td><strong>Empowerment</strong></td>
<td>• Relationships are based on equality</td>
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<tr>
<td></td>
<td>• Relationships are based on respect</td>
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<tr>
<td></td>
<td>• Program establishes and maintains collaborative relationships with parents</td>
</tr>
<tr>
<td></td>
<td>• Partnerships are the basis for promoting growth and change</td>
</tr>
<tr>
<td><strong>Cultural Competence</strong></td>
<td>• Program is community-based</td>
</tr>
<tr>
<td></td>
<td>• Program is socially and culturally relevant to the families it serves</td>
</tr>
<tr>
<td></td>
<td>• Program is a bridge to services and resources in the community</td>
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<tr>
<td><strong>Building Parental Strengths</strong></td>
<td>• Program provides opportunities for parenting education</td>
</tr>
<tr>
<td></td>
<td>• Programs provides parents with information about child development</td>
</tr>
<tr>
<td></td>
<td>• Program provides resources to build parents' competencies and skills.</td>
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One specific model for providing family support services as the “Pyramid of Services” model proposed by the Children’s Defense Fund (1992). This model describes five levels of family needs, with variation in services at each level to meet these needs. The premise of the pyramid model is that families who receive appropriate services at any level of the pyramid often have a lessened need for services at the next level. To be most effective, prevention services must intervene at the earliest possible point and must be coordinated so that families’ needs can be dealt with comprehensively (Children’s Defense Fund, 1992).

Figure 2 summarizes the five levels of the pyramid, as presented by the Children’s Defense Fund, and Roditti’s (1995) explanation of how this relates to child care models. Only the first four levels are linked to early childhood programs in this model, as the fifth level consists of families with an extremely high level of need whose children need to be served outside of the home in specialized settings.
2. **LINKAGE BETWEEN PYRAMID OF SERVICES AND CHILD CARE APPROACH**

<table>
<thead>
<tr>
<th>Pyramid of Services</th>
<th>Child Care Approach</th>
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<tr>
<td><strong>Level One: All Families.</strong> All families need adequate income, food, clothing, housing, child care, education and recreational services.</td>
<td>Child care is increasingly essential for families where both parents work outside the home. With the growing number of single-parent families and reduced availability of extended family and community supports, parents are increasingly relying on child day care personnel as experts who can understand them and educate them during the normal life transitions and crises. Many quality programs have been able to build in social work services, mental health consultation programs, or referrals to services to help families through difficult times.</td>
</tr>
<tr>
<td><strong>Level Two: Families Needing Extra Support.</strong> Family resource and support programs are designed to be universally available to all families and to provide “emotional, informational, and instrumental assistance to young and older families, particularly to families isolated by poverty, joblessness, poor health or other factors” (Kagan &amp; Weissbourd, 1994). The programs offer families easy access to a range of useful services and are helpful for the family that has many basic strengths but need extra support because of life stress. The programs are responsive to parents’ needs and make available a range of services, including hot lines, warm lines, drop-in groups, respite care and counseling, and parenting classes.</td>
<td>Child day care plays a significant role in social support networks for families (Long, 1983; Powell, 1987). Since child day care programs exist in virtually every neighborhood in America, they could be enhanced to serve as family support centers. Some quality day care programs already provide services to families and are considered by many as the least stigmatizing form of support for those who need extra help. Rather than develop isolated family support services and family resource centers, efforts should be intensified to layer these services into already existing programs. With adequate funding, quality day care programs can act as a base for family support programs.</td>
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<td><strong>Level Three: Families Needing Specialized Assistance.</strong> Some families need special programs such as comprehensive substance abuse treatment, respite child care, family-based services, and special health and education services.</td>
<td>Child day care has important roles to play at this level as well. &quot;For the child who has been deprived of experiences that stimulate intellectual, social, and emotional development, the child day care program has an even greater opportunity to supply the developmental learning and socialization experiences a child in our society requires” (Child Welfare League of America, 1992). Well-trained social workers and child development experts make a powerful intervention and support team. They can build on the trust developed in the child day care center to help a family through a crisis. They can evaluate the need and enable parents to use other services, including substance abuse treatment programs, mental health services, and special-needs services, when appropriate (Seitz et al., 1985). Some suggested services are: child day care coordinated with substance abuse treatment, child day care for teen parents, respite care and crisis nurseries, and therapeutic nurseries and special health and education services.</td>
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</table>
2. LINKAGE BETWEEN PYRAMID OF SERVICES AND CHILD CARE APPROACH (CONTINUED)

<table>
<thead>
<tr>
<th>Pyramid of Services</th>
<th>Child Care Approach</th>
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<tr>
<td><strong>Level 4: Families in crisis.</strong> This level includes families who are at-risk for breaking down and are strong candidates for child welfare system intervention. Timely intervention, intensive services, and an emphasis on family strengths and empowerment may prevent out-of-home placement.</td>
<td>Services at this level include intensive family preservation services, child protective services, and child day care and mental health consultation. Ongoing training and support from specialists in social work, child development, and child and family mental health can aid child day care program staff in their efforts to service troubled families.</td>
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<tr>
<td><strong>Level 5: Families whose children cannot be protected or treated at home.</strong> Services at this level include residential treatment centers and therapeutic group homes, foster family homes, relative care or kinship care.</td>
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**Effectiveness of family support programs**

A number of demonstration projects have been conducted to demonstrate the effectiveness of family-supportive early childhood interventions (e.g., Syracuse Family Development Program, Yale Child Welfare Project, Project CARE, and the Brookline Early Education Project) (Lamer, 1995). Family support programs are more successful in modifying parental behaviors than are child-focused programs. A review of the literature completed by Gomby and colleagues (1995) concludes that parents who participate in these programs may provide more stimulating home environments for their children and spend more time talking and reading with them. Another review (Kutash & Rivera, 1995) reported that parents who received family support services experienced the following benefits:

- Increased self-esteem (Allen et al., 1992)
- More positive view of their child's behavior (Allen et al., 1992; Murray, 1992)
- Increase in parental competence (Allen et al., 1992; McBride, 1991)
- Increase in parent-child communication skills (Allen et al., 1992)
- Increased parent-child involvement (McBride, 1991)
- Improved coping abilities (Allen et al., 1992)
- Increased knowledge of child development (Allen et al., 1992)
- Increased parenting and advocacy skills (Allen et al., 1992)
- Decreased occurrence of child abuse and neglect (Allen et al., 1992)
- Reduction in family need in areas addressed by the program (Agosta, 1992; Allen et al., 1992)
- Increased ability to keep children in the home (Friesen & Wahlers, 1993)

A number of positive results have also been obtained regarding the children of families who participate in family support programs. Some research has found that services have a positive impact on developmental tests for infants and young children (Allen et al., 1992; Kutash & Rivera, 1995). One study reported improvements in children's level of achievement, health, and mental development.

The results of these interventions also illustrate that outcomes for children are strongly dependent upon having a strong early childhood component. For example, a review completed by Yoshikawa (1995) concludes that pure family support program without any dedicated child development services appear to have inconsistent and modest effects on children's development. Stronger effects are found when family support activities are combined with an intensive early childhood program.

In sum, the studies of family support programs show short-term impacts on parents but only weak impacts on children's development if an early childhood component is not included. In interpreting these results, it is important to keep in mind three elements of family support programs that may influence their effectiveness. First, the intensity of the services offered by the programs is critical. Many family support programs are not particularly intensive. Some studies indicate that participants in early childhood programs who receive lower intensity services (e.g., one home visit per week) do not benefit as much as those who receive higher intensity services (e.g., full-day early childhood programs) (Gomby et al., 1995; Ramey, Ramey, Gaines, & Blair, 1995). Second, family support programs often tailor their services to meet individual family needs. As a result, program impacts when considered across the whole group of participants tend to be weak and spread across a range of outcomes (Gomby et al., 1995). Finally, one of the premises of family support is that benefits for the children follow from changes in parent behavior and attitudes. Parents are encouraged by program staff to interact differently with their children, but changing any habit is difficult and changing patterns of behavior forged over many years is even harder (Halpern, 1992). As a result, even in the best programs, positive benefits may take some time to emerge (Gomby et al., 1995).
Two-generation programs

Description of model

One of the more recent approaches to providing family-oriented services is the two-generation program model. Two-generation programs were designed to recognize the multigenerational, multidimensional aspects of family poverty and to attack problems associated with poverty from multiple directions (St. Pierre, Layzer, & Barnes, 1995). While similar to family-support programs in that the focus is on improving conditions for the family, two-generation programs provide additional adult-oriented services such as job training or adult education (Gomby et al., 1995).

Early childhood care is often included in two-generation programs, though different programs can show a wide range of ages served and intensity of services. Some programs may provide a few hours of free care while parents engage in other activities, while others may include a comprehensive half-time or full-time educational program (Gomby et al., 1995; St. Pierre, Layzer, & Barnes, 1995).

The services provided to adults by two-generation programs show tremendous variation. Services to parents may be provided through home visits or center-based services. Most programs include a set of services designed to enhance parenting skills, increase involvement, improve self-esteem and coping skills, alleviate depression, or develop parents as teachers. Finally, adult education and employment skill development are often included (Gomby et al., 1995; St. Pierre, Layzer, & Barnes, 1995).

Two-generation programs typically use a case management approach to coordinate and provide services. Programs typically rely on educational and social services that are already available in the community, rather than creating duplicate service structures. They may support existing services by providing transportation or child care while adults participate in these services (St. Pierre & Layzer, 1998; St. Pierre, Layzer, & Barnes, 1995).

St. Pierre, Layzer and Barnes (1995) have outlined a model of the intended effects of two-generation programs. In their words, “under the umbrella of a single integrated program, the two-generation approach seeks to solve the problems of parents and children in two contiguous generations by offering service such as early childhood education and parenting education to help young children get the possible start in life and, at the same time, by offering services such as job training, literacy training, and vocational education to help their parents become economically self-sufficient” (p. 79).
These same authors describe five hypotheses underlying two-generation programs:

- Early childhood education will have a direct effect on children’s cognitive skills prior to school entry and may have long-term effects on child outcomes.
- Parenting education will have a short-term direct effect on parenting skills, which, prior to school entry, will have an indirect effect on children’s cognitive skills.
- Adult education, literacy, and job skills programs will have a direct effect on parents. However, this is not expected to translate into short-term child-level effects.
- The performance of children in elementary and middle school will be enhanced by their experience in an early childhood program, as well as by their parents’ enhanced parenting skills.
- In the long run (high school and beyond), all three program components will enhance the life changes of both parents and their children. Both generations will demonstrate reduced delinquency levels, reduced pregnancy rates, the ability to be informed and responsible citizens, and improved economic self-sufficiency.

Effectiveness of two-generation programs

Theoretically, the three-pronged approach used by two-generation programs (promoting child development, enhancing parenting skills, and providing adult economic self-sufficiency services) should be the most powerful of the intervention models reviewed (Gomby et al., 1995). As several recent reviews discuss, two-generation programs are very promising from a theoretical standpoint (St. Pierre, Layzer, & Barnes, 1995; Yoshikawa, 1995).

Because they are so new, there is not a great deal of data available regarding their effectiveness. Some of the most sophisticated examinations of these programs are only now beginning to produce results (St. Pierre, Layzer, & Barnes, 1995). In general, the research results thus far show positive, but small, effects in a variety of areas.

Most of the research has assessed changes in the parents. Some programs have reported positive changes in parenting skills and behaviors. These effects have included improvements in the home learning environment, child rearing behaviors and attitudes, maternal role as a teacher, sense of parental efficacy, use of community resources, provision of emotional support for children, and mother-child interaction (St. Pierre & Layzer, 1998; St. Pierre, Layzer, & Barnes, 1995).

Two-generation programs have also been associated with a wide range of effects on adult life course outcomes. Among the results have been increased use of federal benefits such
as AFDC and food stamps (due to increased eligibility because of participation in educational programs or increased awareness of benefit availability) and increased use of educational and social services (St. Pierre, Layzer, & Barnes, 1995). One of the strongest impacts has been GED attainment, however, this has not been related to changes in adult literacy, income or employment (St. Pierre & Layzer, 1998). Similarly, no programs have reported measurable differences on psychological variables such as maternal depression, self-esteem or use of social supports (St. Pierre, Layzer, & Barnes, 1995).

Some two-generation programs do not assess outcomes for children, so it is not clear whether they influence child development. Those two-generation programs that have measured child outcomes typically show small or no effects on child development. While the most ambitious two-generation programs yielded small but positive effects on children's cognitive development at two years of age, most of the programs did not affect the children’s status in measurable ways (St. Pierre, Layzer, & Barnes, 1995).

Taken as a whole, the two-generation programs have shown modest effects. These modest effects probably reflect several factors. Like the family support programs, the breadth of the program goals and the tailoring of services to meet the needs of individual families may also lead to a diffuseness that undermines effectiveness and that makes detecting benefits across a group difficult (Gomby et al., 1995). In addition, most do not design or manage their own services for children and families, but instead refer families to community agencies. They therefore have little control over the quality of job training, adult education, or child care assistance that is provided (Gomby et al., 1995).

21st century school programs

Description of model

A third family-focused model for providing services is the School of the 21st Century proposed by Edward Zigler and his colleagues (e.g., Zigler & Finn-Stevenson, 1995; Zigler, Finn-Stevenson, & Marsland, 1995; Zigler & Lang, 1991). This model is designed to promote children’s optimal development by providing high-quality child day care and support services to children from birth through age 12. Its approach is unique in that it makes the public school system the hub of all service provision (Zigler & Finn-Stevenson, 1995; Zigler, Finn-Stevenson, & Marsland, 1995; Zigler & Lang, 1991).

While a school-based program may not be appropriate for the current redesign efforts, the model is included in this review as it may provide useful suggestions for program services or components.

This model includes two child care components: before- and after-school care and vacation care for school-age children and full-day child care for children between the ages of three and five. These child care components operate year round, including holidays, snow days, school vacations, and teacher inservice days. In this model, the
integration of child care and education is critical. In the words of Zigler and his colleagues, “by eliminating the distinction between child day care and education, the model actualizes the notion that learning begins at birth and continues in all settings, not just within the classroom” (Zigler, Finn-Stevenson & Marsland, 1995, p. 1307).

In addition, the model includes three outreach components. The first component is the creation of a network of licensed or registered family day care providers in the district, with the school’s child care system as the hub. At-home providers receive training and general support from program staff. Second, the model includes a resource and referral system that can provide families with information about child care, health care, mental health services and other community-based supports. The third component is a home-based family support and education program. Outreach workers conduct home visits, provide information about child development, and conduct screenings for developmental problems (Zigler & Lang, 1991).

The School of the 21st Century is founded based on six guiding principles (Zigler, Finn-Stevenson, & Marsland, 1995). These principles are as follows:

- Families should have universal access to high-quality child day care. The model is based on parental fee for services, with a sliding scale and subsidies built in to ensure access by middle- and low-income families.
- To enable children’s optimal development, child day care must focus on all aspects of development: social, cognitive, physical and emotional. Therefore, the components of the School of the 21st Century are geared towards the different needs of children at various stages of development, with child day care services playing a particular emphasis on the socioemotional development.
- Professional development is important for child day care providers. Stability of care, and the educational and training background of the care provider are important indicators of quality.
- Schools of the 21st Century promote and encourage parental participation.
- The School of the 21st century is noncompulsory. Programs and services are available on a voluntary basis and families make their own decisions about which, if any, they use.
- An effective system of good-quality child day care and family support must be integrated with the political and economic structure of society. Schools of the 21st Century establish the framework for such integration by tying the provision of child day care and family support services to a recognized and easily accessible institution—the public schools.
While all schools of the 21st Century share these philosophical underpinnings, actual implementation varies across different sites. The needs and the resources of each community determine the actual services that are provided.

**Effectiveness of 21st century schools**

Evaluation data on the effectiveness of this model have only recently become available. It should be noted that the Yale University Bush Center in Child Development and Social Policy conducted these evaluations (the institution that the model’s creators are affiliated with). Preliminary data indicate that the model has had an influence on children’s academic achievement. For example, children receiving 21st Century services received significantly higher achievement scores than children in the same schools who did not receive services and children in demographically matched control schools (Finn-Stevenson & Chung, 1995; Zigler & Finn-Stevenson, 1995).

In addition, local schools have collected their own evaluation data. Results from these evaluations indicate that a wide variety of impacts have been reported, including reduced school vandalism, increased support for the schools, and decreased parental stress (Finn-Stevenson, Desimone, & Chung, 1998; Zigler, Finn-Stevenson, & Marsland, 1995).

**Serving children with special needs**

**Inclusion in early childhood settings**

Integration of children with and children without disabilities in educational settings has received a great deal of attention over the past several decades. Terms such as “mainstreaming,” “Least Restrictive Environment (LRE),” and “inclusion” are prevalent. The majority of the work in this area has addressed working with school-aged children with physical disabilities. Fewer studies have been conducted examining these issues related to youth with emotional or behavioral problems or to service provision at the preschool level.

Until very recently, preschool children with severe emotional and behavioral problems received very little recognition in the professional literature, in teacher training or in service provision (Schmitz & Hilton, 1996). Inclusion has evolved, however, into a recommended practice in both early childhood special education (Division for Early Childhood, 1993) and early childhood education (Wolery & Wilbers, 1994). For very young children with developmental delays, the least restrictive and most natural settings for providing early intervention services will be their homes and early childhood settings (Bruder, 1993).
Therefore a service delivery approach becoming more prevalent is the provision of early intervention services within community preschools and child care centers (Brown, Horn, Heiser, & Odom, 1996; Bruder-Sachs & Deiner, 1990; Hanline, 1990; Templeman, Fredericks & Udell, 1989). Research has indicated that more and more professionals are committed to the inclusion of infants and preschoolers with disabilities in early childhood programs (Rab & Woods, 1995). Similarly, the number of preschools, day care centers, and other early childhood education programs with inclusive programming has been increasing (Wolery, et al., 1993).

Before discussing issues related to inclusion, it is important to clarify the terminology that is used. The term “mainstreaming” usually refers to educational settings where children with disabilities are placed in settings where the primary focus is education of children without disabilities. “Integration” is a broader term that can be used to refer to any type of interaction between populations of children with disabilities and children without disabilities (McLean & Hanline, 1990; Odom & Speltz, 1983). While the articles included in this literature review address both mainstreaming and integration, the greater emphasis has been placed on the information related to successful integration efforts.

**Benefits of integration**

Much of what has been written regarding the outcomes of integration for children has addressed school-age children. However, there is some literature available exploring these issues at the preschool level. According to Peck and colleagues (1989), the research that has accumulated on the topic of mainstreaming and other LRE issues during early childhood has been focused almost exclusively on two areas. First, a large number of studies have investigated interactions between children with disabilities and children without disabilities. These studies have attempted either to describe social processes that have implications for outcomes (Guralnick, 1981; Guralnick & Paul-Brown, 1984; Peterson & Haralick, 1977) or to validate interventions aimed at improving outcomes (Odom, Hoyson, Jamieson & Strain, 1985; Peck, Apolloni, Cooke & Raver, 1978; Strain, 1977). The second area of research has focused on comparing outcomes of segregated versus integrated preschool programs (e.g., Cooke, Ruskus, Apolloni, & Peck, 1981; Ilsa & Matz, 1978; Jenkins, Speltz & Odom, 1985).

**Benefits to children with disabilities**

Many authors indicate that there are a number of advantages to mainstreaming and integration for children with disabilities (e.g., Messersmith & Piantek, 1988). One of the most obvious advantages is the dramatic increase in number of opportunities they have interact socially with peers without disabilities (Alper & Ryndak, 1992). The integrated setting enhances the development of children with disabilities through the availability of advanced models during play (Devoney, Guralnick, & Rubin, 1974), the opportunity to observe and participate in appropriate patterns of communicative interaction (Guralnick,
1981) and social reinforcement of the handicapped child’s appropriate behavior by nonhandicapped peers (Wynne, Brown, Dakof, & Ulfelder, 1975). Odom and McEvoy (1990) argue that the best rationale for integration is the potential benefits to children with disabilities that may accrue from observing and interacting with children who are engaged in age-appropriate behaviors. The communication and social domains are likely to be affected most by the presence of and access to normally developing peers. There is some evidence that the presence of normally developing children facilitates the use of social interaction skills learned in intensive intervention settings although replications of these effects have produced inconsistent results (Hecimovic, Fox, Shores & Strain, 1985; Strain, 1983, 1984).

Research has identified a number of cognitive, behavioral, and psychological outcomes for individuals with disabilities in integrated settings. For example, special education students have been shown to develop more positive self-concepts as they view themselves working on grade level and completing activities that are valued by their peer group. Integration has also been linked to increased language and skill acquisition (Hanline & Murray 1994; Stafford & Green, 1996).

Several authors have compared preschool children in integrated and segregated settings. Jenkins, Speltz, and Odom (1985) compared children in integrated and nonintegrated classrooms and found that while children in both settings improved in a broad array of areas over the course of the year, children in the integrated class scored higher in social play. Buysse and Bailey (1993) reviewed 22 studies comparing young children with disabilities in integrated and segregated settings and found evidence that integration is beneficial in terms of social and behavioral outcomes. However, methodological problems such as a lack of randomization and threats to internal validity limited their ability to interpret the effects of integrated settings.

A third benefit is the higher expectations that both special and regular education personnel have for students with disabilities in the mainstream. The presence of children without disabilities in the special education preschool is believed to increase the level of environmental demand for classroom performance and consequently to maximize the potential of children with developmental problems (Bricker, 1978). Proponents of mainstreaming argue that teachers make more favorable judgments of children with disabilities when observed in settings composed primarily of children without disabilities (McEvoy, Nordquist, & Cunningham, 1984).

**Benefits to children without disabilities**

Teachers also believe that integrated educational settings have benefits for children without disabilities. Inclusive programs provide an opportunity to become comfortable with and accepting of people’s differences. For instance, children without disabilities can learn to respond to others’ needs, develop empathy, and learn to help others (Buysse,
Wesley, Keyes & Bailey, 1996; Demchak & Drinkwater, 1992; Marchant, 1995; Peck, Carlson & Helmstetter, 1992). Another advantage is the opportunity to develop valuable social, emotional, and personal perspectives that are precluded in segregated schools. Students have the chance to develop many new and positive attitudes about human exceptionality as a result of attending school and interaction with students with disabilities (Little, 1988).

**Barriers to integration**

Children with disabilities placed in integrated settings seem to fare at least as well as children with disabilities placed in segregated classrooms (Jenkins, Speltz, & Odom, 1985). However, integration alone does not appear sufficient to produce increased developmental progress (i.e., better than in segregated programs) (Cavallaro, Haney, & Cabello, 1993; Honig, 1997).

Research has addressed a number of suggested strategies for fostering effective inclusion models and the multiple barriers that may exist in integrated settings. Figure 3 summarizes the results of one study designed to address barriers specific to integrated programs at the preschool level. Peck and colleagues (1989) explored concerns of teachers, parents, and administrators and found three general themes: preparation, resources, and conflict. Included within these three themes are a number of specific issues that are often identified as barriers to mainstreaming and integration. In particular, issues related to philosophical inconsistencies, teacher knowledge, teacher-attitudes, staff-family interaction, and structural/curricular requirements have been discussed. Each of these issues will be discussed below.
### THEMES REFLECTED IN CONCERNS RELATED TO INTEGRATED PRESCHOOL SETTINGS

<table>
<thead>
<tr>
<th>Preparation</th>
<th>Resources</th>
<th>Conflict</th>
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<tr>
<td><strong>Parent Concerns</strong></td>
<td>Teacher attitude training</td>
<td>Staff/child ratios</td>
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<tr>
<td>(Note: This sample includes parents of children with disabilities and children without disabilities)</td>
<td>Awareness of non-handicapped children about disabilities</td>
<td>Adequate space for larger numbers of children</td>
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<td>Skills in individualizing instruction</td>
<td>Delivery of therapeutic services</td>
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<tr>
<td><strong>Teacher Concerns</strong></td>
<td>Sufficient planning of integrated program</td>
<td>Release time for daily planning and coordination</td>
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<td>Training needs related to responding to special needs</td>
<td>Sufficient space for integrated groups of children</td>
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<td></td>
<td>Clarification of responsibilities for family members</td>
<td>Consultant availability</td>
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<td>Child-staff ratios</td>
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<td><strong>Administrator Concerns</strong></td>
<td>Parent expectations may be unrealistic for child growth</td>
<td>Funding of nonhandicapped children</td>
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<td>Teachers need training to change negative expectations</td>
<td>Finding and providing adequate class space</td>
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<td>Building parent awareness and support for integrated programs</td>
<td>Providing transportation to new program</td>
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<td>Increased needs for teacher and aide time</td>
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<td>Increased needs for training related to integration</td>
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### Philosophical inconsistencies

According to Telzrow (1992), achieving successful integrated education programs for young children with disabilities requires the satisfactory resolution of philosophical differences between early childhood educators and special educators (Kugelmass, 1989). Safford (1989) conceptualized these differences as the contrast between a “developmentally appropriate practices” orientation and a “special education methods and procedures” or individual child study orientation. Concern about conflict...
philosophies was raised as a barrier in a number of studies (Peck et al., 1989; Stafford & Green, 1996).

**Teacher knowledge**

The provision of adequate services to children with serious emotional and behavioral disorders requires the availability of trained and qualified staff from a variety of areas. These professionals must be able to work well on interdisciplinary teams. Staff members need skills in early childhood education and in mental health diagnoses and treatment. All staff members must be trained in working effectively with parents and families. Staff must also be trained in cultural issues to ensure that communication and intervention are appropriate (Peck et al., 1989; Stafford & Green, 1996).

**Teacher attitudes**

An impediment to integration that has received much attention in the research literature is the attitudes of those involved in the process of mainstreaming. Studies assessing the attitudes of teachers comprise the bulk of the research in this area, with a variety of studies producing interesting findings. Although some authors report that teachers have positive attitudes toward mainstreaming, the majority have been less positive, indicating that many teachers continue to hold negative attitudes (O’Reilly & Duquette, 1988). For example, a national survey of parents, policy officials, and program directors of child care and Head Start centers indicated that approximately 60 percent of those surveyed cited negative teacher attitudes toward integration as a barrier (Rose & Smith, 1992, 1993). Another study that examined nonsurviving inclusive preschool programs found that staff attitudes were often a contributing factor.

Educators’ attitudes toward inclusive education might be expected to vary based on functional issues, that is, the physical, academic, social, or behavioral accommodations that students with disabilities require in order to function in a regular class, regardless of their labeled disability (Wilcenski, 1992). Ward and Center (1987) asked teachers and administrators to rate on a five-point scale their willingness to include children with characteristics such as short attention span, moderate intellectual ability, mild mobility difficulties, and the need for medical monitoring. A factor analysis revealed five factors in which child characteristics clustered according to the demands children made on teacher time, skills, and needs for assistance, and not on the basis of traditional disability categories.

Several other variables have been identified as potential influences on teacher attitudes toward mainstreaming. Factors including teacher age, educational background, grade level taught, number of special education courses completed, and the nature of support received from administrators and support personnel have all been determined to impact teacher attitudes (Antonak & Livneh, 1988; McEvoy, Nordquist, & Cunningham, 1984; O’Reilly & Duquette, 1988; Stephens & Braun, 1980). The appearance of mainstreamed
children, including their physical and sociodemographic characteristics has also been shown to be influential (McEvoy, Nordquist, & Cunningham, 1984).

Staff-family interaction

Several studies have reported that school staff and parents may have difficulties. The relationship between parents and schools has sometimes turned adversarial, characterized by mutual disappointment and scapegoating. One factor that may influence the quality of staff-family interaction is the family’s attitude toward integration. A number of studies have documented that parents of preschoolers with and without disabilities, particularly parents of children who participated in an inclusive setting, typically hold positive views about inclusion (Bailey & Winton, 1987, 1989; Diamond & LeFurgy, 1994; Guralnick, 1994; Reichart et al., 1989; Turnbull & Blacher-Dixon, 1980; Turnbull, Winton, Blacher, & Salkind, 1983; Winton, 1986).

Research has also found that attitudes may vary depending upon the child’s condition. Some research has found that the type of disability may be important. For example, one study found that parents of children with learning disabilities have been more supportive of integration than parents whose children are emotionally disturbed or mentally retarded (Mylnek, Hannah, & Hamlin, 1982). Other research has reported that parents’ perceptions of integration were not related to the severity of the disability itself, but were related to the child’s level of behavioral problems, with parents of children with significant behavioral problems identifying more drawbacks than do other parents (Green & Stoneman, 1989; Guralnick, 1994).

Structural/curricular requirements

A final issue that has been raised as a barrier to effective integration relates to the structural and curricular requirements of inclusion (Stafford & Green, 1996). For example, teachers often have to restructure their approach to teaching and the nature of their classroom exercises. Special equipment or space modifications may be required. As described in the next section, a number of specific curriculum and programming suggestions have been offered to help minimize this issue.

Strategies for promoting integration

As programs have tried to become more inclusive it has become increasingly clear that the success of these efforts for children with and without disabilities depends on a complicated in interrelated array of factors (Lieber et al., 1997). A variety of research has assessed the perceptions of parents, teachers, and administrators regarding what would make programs effective. Other research has identified features of programs that have been found to be effective. When combined, a variety of suggestions are available for creating successful integrated preschool programs. Among these suggestions are the following:
• Promote positive attitudes toward integration through the joint creation of program philosophies and policies. These attitudes can be further enhanced through the creation of supportive joint policy statements by professional organizations (Lieber et al., 1998; Odom, & McEvoy, 1990) and administrative support to the principles of integration (Alper & Ryndak, 1992; Salisbury & Smith, 1991).

• Mix and match useful ideas flexibly from different theoretical perspectives in child development (Honig, 1997).

• Design interagency collaboration models for public and private providers (Odom & McEvoy, 1990).

• Increase personnel’s knowledge about inclusive education through support and ongoing staff development. Specific suggestions include changing the coursework required by ECE and ECSE programs, creating multidisciplinary shared practica, and providing intensive inservice training (Antonak & Livneh, 1988; Conn, 1992; Odom & McEvoy, 1990; Salisbury & Smith, 1991)

• Provide sufficient support to classroom teachers from ECSE and other supportive personnel and allow sufficient time for planning (Alper & Ryndak, 1992; Odom & McEvoy, 1990).

• Provide accurate and sufficient information to all parties before mainstreaming occurs (Alper & Ryndak, 1992).

• Create home-school partnerships and maintain intensive parent involvement (Conn, 1992; Honig, 1997; Salisbury & Smith, 1991).

• Integrate the delivery of educational and related services and use integrated services, classrooms, and instructional practices (Conn, 1992; Salisbury & Smith, 1991).

• Allow opportunities for social integration through planned, frequent, and carefully promoted social interactions between children with disabilities and children without disabilities (Conn, 1992; Salisbury & Smith, 1991; Stafford & Green, 1996).

• Provide transitional planning (Conn, 1992).

• Use a well-defined curriculum that is individualized to learner needs and abilities and facilitates individualized goals and objectives (Cavallaro, Haney, & Cabello, 1993).

• Use curricular strategies that have been shown to be effective, such as the use of appropriate toys and activities and small, teacher-directed social groupings (Beckman & Kohl, 1984; Guralnick, 1978; Jenkins, Odom, & Speltz, 1989; Odom & Strain, 1984).

• Select materials to facilitate engagement and interaction (Cavallaro, Haney & Cabello, 1993).
• Use adult mediation strategies, such as questioning/encouraging/commenting, responsive prompting, fine-tuning and feedback (Cavallaro, Haney, & Cabello, 1993).

• Model appropriate behavior, promote peer modeling with teacher-directed cues and reinforcement, and provide opportunities for imitative behavior and reinforcement (Apolloni & Cooke, 1978; Cavallaro, Haney, & Cabello, 1993; Schoen et al., 1988; Stafford & Green, 1996).

• Arrange the environment to encourage competence and match the level of difficulty of a task to the present level of competence or understanding that a child has already attained (Honig, 1997).

Taken as a whole, the research indicates that the most effective programs are multidisciplinary and provide direct services to the child. They involve the family in the change process, support children and families by providing access to a variety of community services, use varied intervention approaches in dealing with children, and include individualized educational planning (Baenen, Stephens, & Glenwick, 1986; Planek, 1978; Schmitz & Hilton, 1996; Scruggs, Mastropieri, Cook, & Escobar, 1986; Soderman, 1985).

A final point regarding effective service provision is the importance of incorporating a collaborative team process in planning services (Conn, 1992; Lieber et al., 1998). The planning should include students, family members, special and regular education teachers, administrators, facilities and transportation personnel, and related staff services and community leaders (Alper & Ryndak, 1992). Honig (1997) outlines seven planning decisions that need to be faced when planning integrated services: (1) Should integration begin gradually or quickly?; (2) What are the goals and objectives of the program? (3) What learning model will be used? (4) What ratios and schedules will be feasible? (5) How will the program be staffed? (6) How will the program be evaluated?; and (7) What supports will the staff need? Once the program is in place, collaborative teaming, planning, and decision making should occur (Salisbury & Smith, 1991).

Specific models for providing services

Therapeutic preschools

A review of therapeutic preschool models was conducted in 1992 as part of an earlier Wilder Research Center project for the Foundation (Becker, 1992). As part of this review, research was examined regarding therapeutically oriented programs and their effectiveness. These programs served children with specific developmental delays, language disorders, impaired cognitive function, and behavioral and emotional problems. Most programs provided services to children from environmentally understimulated homes and children who were experiencing developmental delays.
The programs varied considerably in terms of the amount, length and type of services that were provided. The intensity of the programs ranged from one to two hours a day to half-day programs to full-day programs. Most were offered between two and five days a week. Many of the programs were comprehensive and interdisciplinary. Program staff included speech and language therapists, early childhood education teachers, psychologists and psychiatrists. The programs focused on building language and communication skills, increasing prosocial interactions, developing self-help skills, decreasing disruptive behavior and helping the child see cause and effect relationships.

This original review drew seven conclusions from the therapeutic preschool literature. An examination of the last several years of research in this area did not yield any new patterns of results. Thus, the seven conclusions originally drawn would appear to still be valid. These conclusions are as follows:

- Preschool programs do not work equally well for all children. Generally, children with below average intellectual functioning, significant developmental delays, or attention deficit disorders do not make significant progress in therapeutic preschools. However, children from understimulated environments, children experiencing emotional or social problems, and children who have not received appropriate or consistent parenting are more likely to benefit.

- The differential effectiveness found in the studies of therapeutic programs emphasizes the need for a comprehensive assessment of each child’s physical, intellectual, behavioral, social and emotional functioning. An intake evaluation is critical to the success of the program and appropriate treatment planning.

- Parent involvement and direct participation in the program is needed in order for the child to make progress in certain areas (e.g., reducing oppositional behavior) and for the progress to generalize to other settings.

- The preschool program must have the capacity to provide or refer parents to other services. Parent-related services are needed and can significantly influence the success of the preschool program.

- The issue of providing therapeutic services in the least restrictive environment was not addressed in any of these models.

- The earlier services are started the better the child’s chance for achieving their treatment goals, especially for children who are experiencing behavioral, emotional and social problems.

- Length of service is an important factor. Most children will need to participate in the programs for 1-2 years.
Day treatment programs

Day treatment services are conceptualized broadly as any program falling “in the middle of the continuum of care between inpatient and outpatient treatment” (Topp, 1991, p. 107) and represent the most intensive form of nonresidential services currently available (Kutash & Rivera, 1995). Day treatment services are “an integrated set of educational, counseling and family interventions which involve a youngster for at least five hours a day” (Stroul & Friedman 1986, p. 44). Partial hospitalization, which refers to hospital-based day treatment, is defined as the “use of a psychiatric hospital setting for less than 24-hour-a-day care” with children returning to their home each night (Tuma, 1989, p. 193). At the other end of the continuum of day treatment programs are school-based day programs, described as “treatment settings for non-mentally retarded children with severe behavior disorders who are unable to function adaptively in the regular school system” (Baenen, Parris, Stephens & Glenwick, 1986, p. 263).

Day school programs usually include collaboration between mental health and special education professionals, a multidisciplinary treatment approach, low student-teacher ratios, family services, and the ultimate goal of reintegration into the educational or vocational mainstream (Kutash & Rivera, 1995). Services are integrated, can be offered in a variety of settings, and frequently involve collaboration among service agencies. The most common settings for mental health day treatment programs are community mental health centers, public schools, special schools, social service agencies and hospitals. Programs have an average of 8 to 10 students per classroom, with a ratio of one staff member to every two to four students. Most students stay in the program one year or longer. This model is most often used for older children and adolescents, though this model has been used during the preschool period as well.

Research has shown a high degree of effectiveness for day treatment programs (Friedman & Quick, 1983; Friedman, Quick, Palmer & Mayo, 1982; Wood, Combs, Gunn & Weller, 1975). For instance, studies indicate that the programs are effective in mediating behavioral difficulties and addressing academic and preacademic deficiencies (Stroul & Friedman, 1986). However, in their review of the literature in child and adolescent mental health trends, Oswald and Singh (1996) conclude that while the literature on day treatment is generally positive, it tends to lack methodological rigor.

Kutash and Rivera (1995) conducted a review of the literature regarding the effectiveness of children’s mental health service strategies. They reached the following five (in their words, tentative) conclusions regarding the effectiveness of day treatment programs:

- Day treatment services appear to promote the reintegration of a portion of children who receive day treatment services. For example, Cohen, Bradley and Kolers (1987) reported a 42% rate of reintegration for children attending a preschool day treatment program.
Day treatment services may contribute to improvements in individual and family functioning. Studies examining individual or family functioning generally have yielded positive results, including increased appropriate behavior and decreased inappropriate behavior, improved self-perceptions, and improved standardized academic achievement scores (e.g., Grizenko, Papineau & Sayegh, 1993; Grizenko & Sayegh, 1990).

The family plays a significant role in the child’s outcomes following day treatment services. The family’s motivation, involvement and stability during and after treatment were important factors in successful outcomes (Cohen, Kolers, & Bradley, 1987; Gabel & Finn, 1986; Sack, Mason, & Collins, 1987).

Day treatment may be more effective for children without severe behavior problems, children who function at a relatively high developmental level, children who are younger, and children who receive treatment for a longer period of time (Cohen, Bradley & Kolers, 1987; Gabel, Finn, & Ahmad, 1988; Grizenko & Sayegh, 1990; Sack, Mason & Collins, 1987; Sayegh & Grizenko, 1991).

Based on the small number of studies that examined this variable, evidence seems to suggest that treatment gains do not generalize to the school setting.

According to Schmitz and Hilton (1996) successful day treatment programs typically have the following features:

- A safe and nurturing environment
- An individualized educational program that focused on the child’s needs
- Individualized mental health plans
- Clearly stated disciplinary procedures
- Strong links with the community and the family
- Small classes
- Family services including family treatment, parent training and individual counseling for parents
- Case management of tangible needs
- Family outreach with a psychoeducational focus to help parents understand both the developmental and special needs of their child
- Behavior modification for the child skills building and to improve interpersonal problem-solving and practical skills,
Recreational art and music therapy to foster social and emotional development

Crisis intervention to provide support and assistance in the development of the family's problem solving skills

**Collaborative models combining education and mental health**

Currently, there are two common community-based approaches to providing integrated services to children with severe emotional or behavioral disorders (Wesley, 1994). The first approach is to use classrooms in public schools that provide special education and regular education with added support. The second model consists of the therapeutic and day treatment programs provided by mental health or other social services facilities (Knitzer, et al., 1990; Schmitz & Hilton, 1996).

As inclusive child care options increase, care providers face a critical need for new ideas and skills that integrate sound early childhood and special education practices. Schmitz and Hilton (1996) proposed a model for combining the resources and knowledge of education and mental health organizations to provide a system of collaborative care. They identify several advantages of a collaborative model, including: flexibility of services, shared expenses, services that cost much less than residential treatment, multifaceted treatment in the least restrictive environment, and opportunities to blending funding streams from education and mental health to provide enriched service delivery (Edlefsen & Baird, 1994; Schorr, 1989). Additional benefits come from enhanced program development in local education agencies and mental health centers or appropriate child serving counseling centers.

According to Schmitz and Hilton (1996), an ideal class in a successful collaborative program has approximately 10 to 12 children, served by three professional staff, paraprofessional staff and professional support. The multidisciplinary classroom teams should include at least one teacher and one social worker. Each child requires two individualized plans – education and mental health. Thus, service delivery must be integrated across the two systems. Successful plans also include parent outreach, child development, recreation and crisis intervention.

In their model, key components of successful integrated programs include:

- Family-inclusive, child- and family-centered assessments and interventions
- Classroom services with educational support and treatment for emotional or behavioral disorders
- Assessment and treatment of communication and neurological disorders
• Consistent disciplinary rules
• Environments conducive to the building of positive relationships and trust
• Collaborative, interdisciplinary service delivery
• Case management
• Culturally relevant and culturally sensitive services
• Integration of the program into the local community and the child-serving community
• Support in the transition to other programs with ongoing services when needed

Collaborative programs function best when they are staffed by multidisciplinary teams, have low student-to-teacher ratios and use ecological approaches (Baenen, Stephens, et al., 1986; Plenk, 1978; Soderman, 1985). Collaborative, multidisciplinary services expand the knowledge base, the ability to respond in a coordinated comprehensive fashion and the depth of intervention (Melaville & Blank, 1991; Schmitz, 1995).

These authors acknowledge, that while there may be some benefits to this approach, collaborations can be a challenge to implement successfully. Issues such as role and time pressures, professional boundaries and competition and personality clashes may come into play (Missour Linc, 1992; Schmitz, 1995). Not only are professionals from the multiple disciplines trained with separate professional languages, creating communication barriers, but organizations and professions are set up with territorial boundaries designed to establish their expertise as primary. These boundaries take time, training and commitment to overcome. Bureaucratic structures and regulations must also be overcome. Personalities also play a role in successful collaborations. The individuals involved must be flexible, committed, comfortable with ambiguity and respectful of others’ expertise and willing to share (Schmitz & Hilton, 1996).

**Conclusions and recommendations**

The research presented in this review has come from a variety of theoretical perspectives and orientations, encompassing child care, early intervention, elementary education, special education, and mental health services. While the research presented has not always been conclusive, the information gathered across these disciplines does point to some general conclusions regarding the effective provision of education, child care, family support services, and mental health services to an early childhood population.
Addressing needs of the target population

Before considering conclusions regarding service provision, it is important to address the specific needs of the population to be served. Two points seem to be the most relevant.

1. The research has consistently indicated that early childhood education programs show the most benefit for children who are the most at-risk. Program outcomes, including cognitive and academic improvements, are most likely when the families who are being served exhibit risk characteristics such as poverty and single parent status. The clients who have traditionally been served by the Wilder Foundation Child Development Center would generally be characterized as a high-risk population. Thus, there would appear to be great potential for making a meaningful difference in their lives through effective service provision.

2. In addition to a consideration of “overall” risk, it is important to remember the specific characteristics of the population being served. Several reviews have concluded that it is important to offer early childhood programs that provide a sufficiently broad array of services in order to meet the needs of the population served. A consideration of the children and families currently being served by the Child Development Center, or those who may be seen as potential clients, may provide useful insights into the specific services that should be included.

Service intensity, onset, and duration

3. Purely child-focused early childhood programs generally do not show differential outcomes based on the amount of time that services were provided, i.e., half-day services were not less effective than full-day services. However, when providing family support or mental health services in coordination with early childhood programming, intensity takes on greater significance. For these types of models, greater intensity of services is related to more positive outcomes.

4. There is some research to support provision of services as early as possible. Beginning services early, and continuing them for at least one or two years, would provide greater opportunity to make a meaningful impact.

5. Research has consistently shown that the benefits of early childhood programs often are not sustained over a long-term period. Once services are discontinued, children typically lose some of the benefits that they may have gained. If the goals of the Child Development Center extend beyond provision of quality child care, the Center may want to consider providing transitional services to children leaving the program to enhance long-term effectiveness.

6. One explanation for this pattern is that children in disadvantaged areas may be entering schools that are low-quality or returning to neighborhoods that do not
provide the necessary supports. Long-term effectiveness may be improved in part by developing integrated services that are coordinated with school and community programs.

**General features of program quality**

7. Research has consistently supported five features of program design as indicative of high quality: low class size and student-teacher ratios, appropriate curriculum, adequate staff training, responsive caregiving, and staff stability. These five indicators are strongly tied to better outcomes for children, so every effort should be made to set high standards in these areas.

8. The specific form that each of these characteristics should take will vary depending upon the service delivery strategy developed. For example, research on preschool integration has indicated that these areas may play unique roles in determining program success. If an integrative model is used, the program will need to ensure that staff receive ongoing training necessary to work with children with special needs. Similarly, a curriculum approach will need to be established that is appropriate for the specific population that is served.

**Child-focused and/or family-focused services**

9. It is not surprising that benefits are seen primarily in the area that an intervention targets. Thus, child-focused programs benefit children more than they benefit adults and adult-focused programs tend to benefit adults more than they benefit children. Programs that rely on indirect methods of intervention (influencing the child only through their effects on parents) have some of the weakest results on child outcomes.

10. Research reviews have concluded that the child-focused programs which produce the most substantial long-term outcomes combine center-based services for children with significant parent involvement through home visits, classroom participation, or parent group meetings. Parent involvement can be seen as a necessary contributor to success, but not sufficient by itself to produce long-term benefits for children and families. This involvement should be meaningful and sustained.

11. Combining family support services with early childhood services may foster improved outcomes for children and families, but only if the services are of sufficient intensity and geared towards the needs of the population served.

12. It is not clear whether adding adult-oriented services such as job training or education to an early childhood model would improve outcomes for children or not. The data that are currently available from models such as two-generation programs...
and 21st Century Schools have not yielded strong child outcomes. However, the research in this area is fairly preliminary and both of these models have strong theoretical underpinnings that may warrant consideration.

**Provision of mental health services**

13. Research consistently has indicated that integrative models of early childhood education have benefits for children with disabilities and without disabilities across all educational levels, including preschool. Since most of this research has concerned children with physical disabilities, staff should consider whether these same benefits would exist for children with emotional and behavioral issues.

14. To make an integrated setting successful, it will be important to provide sufficient supports to the staff, including training, materials, and resources, and opportunities and time to participate in the planning process.

15. The most effective programs have the following features: they are multidisciplinary, provide direct services to the child, involve the family in the change process, support children and families by providing access to a variety of services, use varied intervention approaches and include individualized educational planning.

16. Program models such as day treatment programs and therapeutic preschools have found positive outcomes for children and families. However, they generally do not include an integrative or inclusive component. There are features of these models, however, that may be applicable within the Wilder Child Development Center, such as case management and family outreach.

17. New collaborative models that combine education and mental health services may provide a useful starting point for developing services for an at-risk early childhood population.

**Appropriate program goals**

18. The goal of many initiatives is to lift significant numbers of children out of poverty. This goal has little evidence to support it. Instead, programs should focus on a variety of short-term goals related to family functioning and child outcomes. There is a wealth of evidence to support that many of these programs do make a difference in the lives of children and families.
Appendices

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Appendix I: List of model programs

In addition to the references cited below, information about these programs was adapted from a variety of secondary sources (Barnett, 1995; Campbell & Taylor, 1996; St. Pierre, Layzer, & Barnes, 1995; Yoshikawa, 1995).

- **Avance Family Support and Education** (1973 to present): This program seeks to help children succeed in school by teaching parents to teach their children and by meeting parents’ educational and job training needs. Services include three hours of child care per week while parenting services are delivered to the mother, monthly home visits, adult literacy program.


- **Birmingham Parent Child Development Center**: Serves children from 3-5 months old until 3 years of age; services include parent support and education.


- **Brookline Early Education Program**


- **Carolina Abecedarian** (1972 to 1985): This program offers full-day child care for preschoolers and a program for school children and parents. The program serves children from 6 weeks until 8 years of age and has collected follow-up data from the children at ages 8, 12 and 15.


- **Chicago Child and Parent Center**: Child-focused program providing half-day preschool and full-day kindergarten.


- **Child and Family Resource Program** (1973 to 1983): This program was based on the premise that the best way to promote children’s growth and development is by supporting families and helping parents become more effective caregivers and educators. Services include a Head Start program and parenting, child development, support and social services delivered through monthly home visits and occasional center-based sessions.


- **Comprehensive Child Development Program** (1990 to present): This program is funded in 34 sites to provide comprehensive, continuous, coordinated social, health, and educational services to low-income families with a newborn child for up to five years. Services include developmental screening, center-based and home-based child care, home visits, Head Start program, parenting education, adult literacy education, vocational training, employment counseling, and job training and placement. Many services are provided through linkages and referrals to other agencies.

• **Curriculum Comparison Study** (1965 to 1967): Examines results of a part-day preschool program and a kindergarten program.


• **Early Training Project** (1962 to 1967): Services provided include home visits and a summer part-day preschool program for children between the ages of 4 and 6.


• **Even Start Family Literacy Program** (1990 to present): More than 400 local sites participate in this program. Services vary in different locations depending on needs and linkages, but often include Head Start, Chapter 1, Even Start preschools, parenting education, adult basic education, adult secondary education, and GED preparation.


• **Florida Parent Education Project** (1966 to 1970): Part-day preschool for children between the ages of 2 and 3 twice a week and home visits.


• **Harlem Study**: Provided short-term intervention to two- and three-year-olds.

Palmer, F.H. (1983). The Harlem Study: Effects by type of training, age of training, and social class. In Consortium for Longitudinal Studies (Eds.), *As the twig is bent...lasting effects of preschool programs* (pp. 201-236). Hillsdale, NJ: Erlbaum.
• **Head Start Family Service Centers** (1990 to present): This program is funded in 66 sites. Each site provides regular Head Start services. Case management is used to assess needs and to provide referrals to adult literacy and employment training programs.


• **High/Scope Perry Preschool Project** (1962 to 1967): This program provided a preschool program and home visits. Follow-ups have been continued into adulthood.


- **Houston Parent Child Development Center** (1970 to 1980): This program provided full-day child care for children between the ages of 1 and 5, home visits, and a center-based program for parents.


- **Infant Health and Development Program**: Provides home visits on weekly and biweekly bases, half-day preschool, and bimonthly parent group meetings.


- **Institute for Developmental Studies** (1963 to 1967): Provided home visits, a part-day preschool program and a parent center school serving grades K-3.


- **Milwaukee Project** (1968 to 1978): Program provides full-day child care and job and academic training for mothers.


- **New Chance** (1989 to 1992): Comprehensive program for disadvantaged young mothers and their children. Services include case management, educational services (life skills, parenting education, pediatric health), GED preparation, adult education, vocational training, job placement, and free child care in high quality centers.


- **Philadelphia Project** (1963 to 1964): Conducted a party-day preschool program and home visits.


- **Project CARE**: Provides home visits and full-day child care.


- **Syracuse Family Development Research Program** (1969 to 1975): Provides full-day child care and home visits.


- **Verbal Interaction Project**: Provided home-based language stimulation program for two- or three-year-olds.
Levenstein, P., O'Hara, J., & Madden, J. (1983). The mother-child home program of
the Verbal Interaction Program. In Consortium for Longitudinal Studies (Ed.),
As the twig is bent: lasting effects of preschool programs (pp. 237-264).

- **Yale Child Welfare Research Program** (1968 to 1974): Provides home visits,
full-day child care, pediatric care and developmental screenings for children
up to 30 months of age.


Appendix II: Bibliography


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