

Linking Child Care and Support Services with the School: Pilot Evaluation of the School of the 21st Century

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This paper reports the results of an evaluation of two pilot Schools of the 21st Century (21C), a school-based services model which provides a comprehensive program of child care and family support to children from birth to 12 years old. Two elementary schools in Independence, Missouri, serving predominately middle-class white suburban communities, were tracked during their 2nd, 3rd and 4th years of implementation of 21C. The study sample consisted of 185 children in the intervention schools and 83 children in two comparison schools. Data was collected from parent, teacher, childcare staff, and principal surveys and school records. Parents who used 21C child care, compared to parents who did not, spent less money on child care, missed significantly less work because of failure of child care arrangements, and showed a significant decrease in parent stress as measured by the Parent Stress Index. The preschool child care program was credited with enabling early identification of special needs children and increasing children's readiness for Kindergarten, and the school-aged child care program was noted for providing mixed-age group activities and role models for younger children. Challenges and lessons learned from implementation are discussed.

This article is an analysis of the implementation of one of the first School of the 21st Century models. The School of the 21st Century was conceptualized by Dr. Edward Zigler to provide a comprehensive program of child care, early education and family support for children from birth to 12 years old, all operating from one central location-the neighborhood school. The overall goal of the 21C program is the optimal development of children through the provision of support services. There are presently over 500 Schools of the 21st Century operating in 16 states across the Country, serving over 250,000 families. This study of two pilot sites in Independence, Missouri tracks the second, third, and fourth years of the program's implementation from the view of parents, principals, teachers, and staff, discusses the evolution of the quality of the child care components, and offers preliminary evidence of an association between the 21C program and improved social and educational Outcomes for children and their families.

Background: The Child Care Crisis in the U.S.

Increasing numbers of full-time working parents have limited options in finding quality, affordable child care and preschools for their children (Hofferth, 1996; Zigler & Finn-Stevenson, 1995). This is true especially in low-income areas (Carnegie, 1996), where the lack of affordable and appropriate child care is considered to be a serious

impediment to the successful transition of parents from welfare to work. As a result, children often spend time in several different child care settings in the course of one day, including situations where there is no adult supervision or where care consists primarily of watching television (Carnegie Foundation, 1996; Casper, Hawkins & O'Connell, 1992).

Many of the child care programs that do exist create financial and transportation problems for parents, and offer low-quality care. Comprehensive evaluations of preschool and other early care and education programs have shown that the majority of programs fail to meet minimal standards of quality, and that most children spend their days in mediocre-to-low-quality care, in a service system which ranks among the worst for children in Western society (Cost, Quality, and Child Outcomes Study Team, 1995; Kagan & Cohen, 1996).

Consequences of Poor Quality Child Care

There is a wealth of evidence which demonstrates that the quality of a child's early learning experiences and out-of-school experiences are crucial to the child's academic and social development (e.g. Bronfenbrenner, 1979; Center for the Future of Children, 1992; Comer, 1980; Comer et al., 1988; Zigler, Kagan, & Hall, 1996; Zigler & Valentine, 1979). Well-designed and implemented child care programs are associated with children's increased academic achievement and improved behavior, peer relations, and emotional adjustment (Cost, Quality, and Child Outcomes Study Team, 1995; Posner & Vandell, 1994; Schweinhart, Barnes & Weikart, 1993; Vandell, Shumow & Posner, 1996). In contrast, low quality programs (e.g. programs with a poorly trained staff and/or few age-appropriate activities) can undermine a child's development (Miller, 1994), and have been associated with low socioemotional, language, and cognitive development (Whitebook, Howes, & Phillips, 1989), particularly for low-income children (Vandell, Shumow & Posner, 1996). Further-more, children with no adult supervision after school, compared to their peers who do have adult supervision, may suffer increased fear, worry and loneliness, and may be more susceptible to negative peer pressure, substance abuse and crime (Fight Crime. Invest in Kids, 1997; Long & Long, 1982; Powell, 1987; Richardson et al., 1989).

National Call for Quality Child Care

In response to this research which has documented the importance of quality child care for children, the 1996 Carnegie Foundation report, *Years of Promise*, called for a "national commitment to expanded high-quality public and private early care and education programs for children ages three to five" (p. xi), to replace the "nonsystem of early care and education to which some 13 million American children are entrusted each day (p.53)." The report also recommended the creation of mechanisms to ensure the availability and affordability of quality preschools for all families who wish to enroll their children in preschool.

The need for school-age after-school programs has become evident as well (e.g. Miller, 1990). By 1991, more than 1.7 million children, most from Kindergarten through fourth grade, were enrolled in some kind of after-school program (U.S. Department of

Education, 1993). In 1996, there were 50,000 after-school programs around the country, most of which were operated by not-for-profit agencies (Carnegie Foundation, 1996).

The School of the 21st Century. The School of the 21st Century was designed to address the national need for affordable and accessible preschool education and school-age child care. The model is based on the assumption that a child's chances for optimal development are increased by the integration of the family, the educational system, the child care system and the health care system. The goal of the 21C model is to transform the school building into a year-round multi-service center that is open from 6 or 7 a.m. until 6 or 7 p.m., 12 months a year, in order to be more responsive to the needs of today's families than the limited hours and services of the traditional school.

The guiding principles of the 21C model are universal access to high-quality child care, a focus on the overall development of the child, the provisions of a professional framework for child care providers, and strong parental support and involvement. There are two child care components to the model: 1) all-day year-round child care for children ages 3-5, and 2) before- and after-school and vacation care for children ages 5-12. To ensure quality, schools are encouraged to adopt curricula guidelines, such as the Wellesley School-Age Child Care Program (see National Association of Elementary School Principals, 1993) and the High/Scope preschool curriculum¹ (Schweinhart, Barnes & Weikart, 1993).

There are several outreach services that are also part of the School of the 21st Century model. A home visitation component, based on the Parents As Teachers (1995a) program provides support and guidance to families beginning in the third trimester of pregnancy and continuing until the child is 3 years old. Other outreach services include an information and referral system, training for other day care providers in the community, and a health and nutrition component.

The type and level of implementation of the program varies across sites according to community needs and resources. In some cases, a school may implement not only 21C components but additional services such as literacy training for parents and various social services. Funding sources can differ as well. Usually, initial start-up costs are paid for through community foundations and/or corporate support. For most 21C programs, sliding scale parental fees are usually able to cover the cost of the program after the first year, and federal and state subsidies and corporate scholarships are made available for low-income families.

Evaluating Comprehensive Service Programs

This evaluation of the School of the 21st Century was undertaken with the goal of providing useful information relevant to the implementation of this and similar school-based service programs. Program evaluation can provide a vital source of information, feedback and recommendations for program development, assessment and improvement (Brown, 1995; Kubisch et al., 1995)⁵. However, evaluating the outcome of comprehensive service programs can be a formidable task (Kubisch & Connell, 1996; Kubisch et al., 1995) for several reasons: the programs often have broad, multiple

goals, the achievement of which depend upon interactions throughout the system; the intervention is usually flexible and constantly evolving (Brown, 1995; Kubisch et al., 1995); and it is uncertain when it is appropriate to expect particular outcomes (Weiss, 1995). In addition, because programs operate at so many levels (Kubisch et al., 1995), it is difficult to identify and measure the social-ecological context (e.g. school, community and family) (Howrigan, 1988) which plays an important role in influencing a program's effect (Felner et al., 1997; O'Connor, 1995).

One way of addressing the challenges of outcome evaluation is to conduct an implementation analysis. Tracking the micro-stages of effects, or intermediate outcomes as they evolve makes it more plausible that the results are due to program activities and not to outside events or artifacts of the evaluation and that the results generalize to other similar type programs (Weiss, 1995). Also, analysis of the program as it evolves enables the consideration of the comprehensiveness and level of implementation (Felner et al., 1997), an important factor since so many initiatives have complex and varied levels of implementation (Kagan, 1991).

A major portion of this evaluation was an attempt to track the implementation process, an often neglected area of evaluation which contributes to the development of an understanding of how and why effects (or no effects) come about in response to program interventions (referred to by Weiss, 1995 as "theories of change"). Implementation analysis is important because "we do not know what has changed (if anything) unless we attempt to conceptualize and measure it directly,..(and) without knowing what is in the 'black box' of implementation, we do not know how to interpret the outcomes or absence of outcomes" (p.21-22, Fullan, 1992). This analysis attempted to document the program's implementation by focusing on process questions, especially those about procedures, conceptual processes, dedication of the staff, and level of progress (Tharp & Gallimore, 1982).

The First Schools of the 21st Century: Independence, Missouri

The first Schools of the 21st Century (21C) opened their doors in Independence, Missouri in September of 1988. after one year of planning. The Independence school district first focused on implementing universal before- and after-school care for 5-12 year olds and all day year-round child care for 3-4 year olds. The home visitation PAT component had been in place in the district since 1981. Within the first 5 months of implementing the 21C program, the school district served 350 children in before-school care, 378 in after-school care, 80 children in preschool, and 58 kindergartners in flip-flop services (i.e. half a day of Kindergarten and half a day in child care). The PAT program served 1296 parents, and the district's resource and referral services served 380 families. Child care services in the schools generally extended from 6:30 am to 6:00 p.m., year round. The district implemented all of the 21C components except for the support for family day care providers and the health and nutrition components which were implemented later. All of the 21 C services were made available to all families who lived in the district, on a non-compulsory basis.

Program Goals

Although all 21C programs share the common goal of the optimal development of children, each program also develops its own specific goals and objectives. In Independence, the district's objectives for children were to reduce absenteeism, behavioral problems and the number of hours children were unsupervised after school, and to increase children's consistency of care and school performance. For parents, the goals were to help reduce the following. 1) expenditures for out-of-home child care, 2) maternal guilt and stress, 3) the days of missed work due to failure in child care arrangements, 4) the time parents spend traveling to child care arrangements, and 5) the time parents spend looking for child care; in addition, the district wanted to increase parents' satisfaction with the public schools. The goals for the community were to increase the number of available child care slots.

Methods and Procedures

The evaluation of the Independence, Missouri 21C program focused on the second, third and fourth years of its operation, from the 1989-90 school year to the 1991-92 school year. A combination of quantitative and qualitative inquiry was used to collect information on both the implementation process and program outcomes. Although conducting an Outcome evaluation is usually not appropriate until the program has been fully implemented and achieved stability, which generally takes 3-5 years (Sanders, 1992), this analysis does include measures of student and parent outcomes. These measures were collected primarily as a first step towards establishing a longitudinal tracking system to document long-term outcomes. Findings should therefore be considered as merely suggestive of the direction and type of effects that 21C might have.

The evaluation focused on four schools: two 21C elementary schools in the Independence school district, both of which offered preschool and before-and after-school programs, and two elementary schools in the adjacent Fort Osage school district,6 matched demographically to the intervention schools to serve as comparison schools. The comparison schools had their own before- and after-school child care program which was housed in one of the schools; it was limited in scope, but was a stable program that had already been in place for five years at the beginning of this study, in the fall of 1989.

For the most part, the data from the two intervention schools and the data from the two comparison schools were combined to form one intervention and one comparison group. However, subsample analyses were conducted for preschoolers, school-age children, and for participants who provided data for the entire three-year study period. In addition, any notable differences that existed between the two intervention schools were discussed. The intervention schools were referred to as School A and School B.

Validity Threats

The study sample had a self-selection bias because participation in the child care programs as well as the evaluation was voluntary. Without random assignment there is no good way to prevent self-selection bias, which confounds selection effects and treatment effects (Cook & Campbell, 1979; Hollister & Hill, 1995; Kubisch et al., 1995).

Even the use of matched comparison groups, the method employed for this study, involves many methodological and logistical problems that can result in errors of inference that can be quite substantial (Cook & Campbell, 1979; Hollister & Hill, 1995; Kubisch et al., 1995)

The sample could also be biased because of the attrition that occurred during the three years of the study. About half of the participants in the comparison group and one third of the participants in the intervention group dropped out of the study by the third year of data collection. Another weakness was that the comparability of the intervention and comparison groups varied from year to year on such characteristics as income and maternal employment. For example, the comparison group had more lower-income families drop out of the study than did the intervention group. This weakens the internal validity of any significant differences found between the intervention and comparison groups.

Data Collection Procedures and Measures

Letters soliciting study participants were sent to all parents of children of preschool age to 6th grade, in all four schools. Interested parents attended an orientation session, and parents willing to participate completed consent forms. The surveys were mailed to parents with a postage-paid return envelope; parents were paid \$10 for each survey that they completed over the course of the evaluation. Parents with children enrolled in 21C also completed an enrollment form each year, which asked about the history of the families' use of child care arrangements, the parents' reasons for choosing 21C, and the parents' attitudes about the 21C program.

Sample size. The school-age intervention sample consisted of 120 families with school-age children who attended the two intervention elementary schools. Forty-eight of these families had enrolled their children in the 21C before- and/or after-school care program. The comparison school-age sample was comprised of 50 families from the two comparison elementary schools. In the preschool age sample, there were 65 families from the intervention schools, and 38 families from the comparison schools. There were about an equal number of girls and boys in both the intervention and comparison groups. Families in both groups were mostly white, two-parent middle-income families.

In the first year of the study, 12 principals in the Independence school district completed self-administered implementation surveys, and 10 staff members from Schools A and B completed surveys. During the second year of the study, the two principals and 15 child care workers and Site coordinators from schools A and B completed in-depth self-administered open-ended surveys. In the third year, surveys were completed by 9 Kindergarten and first grade teachers, 16 staff members and 2 principals from the two intervention schools.

Measures

In order to ensure relevancy to the program, measures were chosen that were closely linked to the program's stated goals. To assess the quality of child care in the two intervention preschool programs, the Early Childhood Education Rating Scale (ECERS)

(Harms & Clifford, 1980) was administered by a trained consultant during the spring of each evaluation year. The ECERS assesses the child care environment in seven areas: 1) personal care routines of children, 2) furnishings and display for children, 3) language-reason experiences; 4) fine and gross motor activities, 5) creative activities, 6) social development, and 7) adult needs. This scale has been widely used for many years in assessing day care facilities, Head Start programs, parent cooperative preschools, and Kindergarten programs, and the reliability and validity of the scale for evaluating the classrooms and curricula of programs for children 2-6 years of age has been well established (Cost, Quality, and Child Outcomes Study Team, 1995; Farquar, 1989). For the school-age child care programs, a qualitative assessment similar to the ECERS was completed by a trained consultant at the end of the third year of evaluation at both the intervention and comparison schools.

In the first year, parents of preschoolers were given a general Stress questionnaire. In the second and third years, the Parenting Stress Index (PSI, Abidin, 1983) was administered to all parents. The PSI measures stress in the parenting system in the child domain, the parent domain, and life Stress related to parenting, and also provides a total overall general stress score. Student enrollment and attendance was monitored for all three years, and in the third year of the evaluation, the tracking of student achievement measures was initiated.

Findings

Program Growth: Enrollment and Reputation

In the intervention schools, most of the 21C components, particularly flip-flop Kindergarten and preschool care, experienced large increases in enrollment over the three year study period, and program growth continued each year after the evaluation was completed. The growth in enrollment seemed to be due to both the convenience and quality of the program. In the first year of the study, most parents reported that they chose 21C child care because of its convenience. In the next two years, parents increasingly chose quality and reputation as the reasons for using the program. Parents, especially single parents, expressed their appreciation for being able to leave their child in a safe and developmentally appropriate environment which was well designed to accommodate their work obligations.

Staff characteristics. Over the three year evaluation period, for the most part, there was a gradual decrease in the staff to child ratio and the staff turnover rate. The most dramatic decrease in the staff turnover rate occurred in the third year of the evaluation, during which time it dropped from 40% to 7% at School A, and from 33% to 13% at School B.

At the same time, there was a shift from more lower-income full-time workers to more middle-class part-time workers, Program coordinators suggested that the corresponding increase in benefits and salary and decrease in the staff to child ratio may have made the child care positions more attractive to middle-class employees. According to the third and fourth year staff members, however, they chose to work at 2 iC because of the

program's reputation, and because the program afforded them the opportunity to participate in child development training and to work with their own children who were students at the schools.

The Implementation Process

Results from the staff, faculty, and principal surveys documented the evolution of the 21C program in its second, third, and fourth years of implementation. The principals reported that they adopted the program to respond to the growing needs of working parents in the community for affordable, accessible child care, and that they were able to implement the model without encountering any insurmountable obstacles.

The child care staff, principals and teachers all acknowledged the economic efficiency, convenience and affordability of the 21C model. They said that they thought that the 21C program provided a safe and familiar environment for the children. They commented that they thought the program benefited the children academically by providing them with quality care in an instructional environment; and they said that the program gave children opportunities to engage in stimulating and constructive activities during non-school time, which the children otherwise might spend "watching television or getting into trouble."

The preschool child care component was praised by principals, staff and teachers who thought the program increased the preschoolers' readiness for Kindergarten. Several principals in the first year also commented that the preschool child care program was useful for identifying developmental problems early in the child's academic career, as well as for fostering the early development of positive relations between the parents and teachers.

Principals and staff also suggested that mixing age groups in before-and after-school care resulted in an improvement of relations among students of different ages. They thought that the program aided children's personal growth and social development by teaching them how to work together in groups; and they also said that the older children gained a sense of responsibility by working with the preschoolers, and that the older children provided the younger children with positive role models.

Both the second and third year staff said that there was a high level of cooperation among the child care providers. They said that the program offered them an opportunity to employ team teaching, share tasks and work together, and that the staff as a whole was supportive of the program and of each other.

The principals noted parents' support and enthusiasm for 21C's child care programs. Many of the principals in the first year of the study reported that parents were consistently complimenting the program: one parent called the program a "lifesaver", one said it was the "answer to [their] prayers", and another said that their children "loved the program." In response to an open-ended question about program benefits, over half of the principals mentioned parent appreciation and/or the public relations value of the program. The only complaints from parents that principals reported concerned requests

for expanded hours in certain locations. A few principals also mentioned unanticipated benefits that they thought were associated with the establishment of the 21C program, such as a decrease in school vandalism and in students' attrition from the school, and a record number of parents turning out to vote on a district bond levy increase.

Overall, the principals expressed excitement about the program. They recognized 21C as a positive addition to their school, although they acknowledged that it would take time for the entire school to adjust in order for the program to run smoothly. In the second year of implementation, 11 of the 12 principals expressed the intent or willingness to increase their schools' services in the next year.

Implementation challenges. Despite the almost unanimous support for the convenience and the economical and academic benefits of the program, implementation of the program posed several challenges. Overall, the second-year staff agreed that 21C was "a great program but poorly run," and that the program had not reached its full potential. In the second year of the program, the main concerns of the principals and staff were that the staff received low wages and lacked proper training. The staff said that they would have more time to engage in constructive activities with the children if they did not have to collect fees and if some staff members were trained specifically to deal with children with behavioral and emotional problems. Another concern in the second year was that there was a shortage of financial assistance for parents who could not afford to pay for 21C child care.

The principals and program coordinators addressed these issues early in the implementation process, and by year four, both staff and principals noted improvements in increased training opportunities (including the Child Development Associate (CDA) credential, guidance counseling, a districtwide summer training program, and program management for coordinators), improved staff quality, increased wages, and the provision of scholarships for families who needed them.

Another major conflict during the second year of implementation was that the child care staff felt that the classroom teachers did not support them or the program. As a result, the 21C programs and the school itself were viewed as two separate entities, unable to collaborate. The teachers' resistance might have been due to the fact that teachers had not been involved in the planning stages of 21C, nor had some of them even been informed of its implementation until the start of the school year.

To address this problem, during the third and fourth years of implementation, efforts were made to increase communication between staff and teachers and to integrate the teachers into the program. As a result, principals and staff reported in the fourth year that the teachers' acceptance of the program substantially increased, that most teachers in fact had a positive attitude about the program, and that the relationship between child care workers and teachers had greatly improved. Staff members indicated that although some tension still existed, teachers had more respect for the 21C program, and that it was not unusual for a teacher to invite children from the preschool child care program to visit his or her classroom. In addition, the staff reported that they often discussed

specific children with the teachers and worked together to coordinate a particular child's needs. The child care staff considered this sharing of advice to be productive and helpful. For example, one staff member said that she often alerted the classroom teacher if a child was having a discipline or emotional problem that might carry over into the school day, which in turn enabled the teacher to be better prepared to interact with the child.

By the fourth year, the principals said that teachers and staff who were hesitant about the program during the first year now embraced the program. They guessed that this was due to the effect of having first-hand experience of the benefits of the program. The principals believed that the maturing of the program had created a unifying integration of the 21C components into the larger scope of the school. One of the principals said that the program "just keeps getting better."

All of the 16 staff members who completed the survey in the fourth year of the evaluation noted an overwhelming improvement in the program's operation from the previous year. Consistent with the first two years of the evaluation, the staff praised the program for its affordability, quality, and convenience for parents. Most staff members still maintained that low wages were a problem, but noted that there had been improvements in training opportunities, in networking with other programs, in teacher/staff relationships and in parent/staff interactions.

There were still several challenges that had not been overcome by the fourth year, however. Lack of space was a consistent problem. Both principals reported that there was not always enough space for adding new components of 21C, and that they had some difficulty in adapting available facilities to the needs of the preschoolers. During the fourth year of the study, teachers in School A felt that the 21C programs were overcrowding the school, and that the program was not doing a good job of sharing space with the teachers.

In the fourth year, principals said that scheduling was sometimes problematic, since the additional programs required many of the staff, including custodians, to work longer hours. Teachers reported that the noise level in the preschool and Kindergarten classrooms was sometimes disruptive to nearby classrooms. In addition, School A teachers said that it was difficult for some of the children to make the transition from the more relaxed rules of the before-school program to the stricter classroom rules. As one teacher phrased it, children had to remember that "downstairs [in before-school care] I can, upstairs [during the school day] I can't." Teachers said that many children in before-school care arrived to class "all wound up" and that teachers had to take extra time to calm them down. They suggested that 21C before-school activities be "less active." In response to these concerns, the staff and coordinators began to institute calmer before-school activities so that the children would not be overly excited when the formal school day began, and initiated efforts to locate the Kindergarten and preschool classrooms in areas where it would not disturb classroom teachers.

The only new complaint in the fourth year was that many of the staff thought that the district and school board seemed to be more concerned about financial constraints than the needs of the children. At one point the board and the district leadership stopped purchase orders and refused to hire new personnel for the 21C programs until they regained funds that had been lost during the previous year. As a result of this situation, the staff said that they felt that the district leadership had neglected the needs of the children and had been disrespectful to the child care professionals. Otherwise, staff members said the district seemed supportive and committed to 21C, and they anticipated continual improvements. One staff member commented that the 21C program helped the district and schools remember that "children come first."

Quality of Child Care

The evolution of the quality of the preschool child care at both 21C schools showed a similar pattern of improvement over the 3 year study period. At School A, from the first year to the third year of the evaluation, most of the ECERS scores increased from between minimal and good to the good range and above (see Table I for ECERS scores). In the same time period, School B gradually increased their scores in almost every domain, and by the third year most scores were within less than one point of the good range.

The qualitative assessment of the school-age child care program at School A judged the program to be in the adequate to good range, but improvements were recommended for unifying the staff and creating more positive staff/child interactions, and developing a more child-directed curriculum. The evaluator rated School B's school-age child care program as excellent, primarily due to the child-directed atmosphere and varied curriculum. Suggestions for improvements included increasing staff accountability and structural changes to the classroom to facilitate the separation of activities. The school-age program at the comparison school was praised for its warm and comfortable atmosphere and for the positive relationship between the coordinator and parents. However, the rater was concerned that the staff did not provide adequate problem-solving opportunities to the children, and that there did not seem to be any specific curriculum in place; the program was rated as adequate.

Table 1
ECERS Scores - Average Score

1990

1991

1992

Domain

School A

School B

School A

School B

School A

School B

Personal Care Routines

4.6

3.0

4.4

3.2

5.2

4.4

Furnishings/Display

4.0

3.5

4.8

4.0

5.6

4.4

Language/Reasoning

3.7

3.5

4.75

3.5

4.6

3.75

Fine/Gross Motor Activities

4.8

4.3

4.8

4.5

5.2

4.8

Creative Activities

5.1

4.7

5.6

4.4

5.1

4.4

Social Development

3.5

3.0

3.8

3.6

4.6

3.6

Adult Needs

5.0

5.0

5.25

5.0

5.75

5.25

Overall Average

5.0

3.0

4.75

4.0

5.1

4.37

ECERS is scored on a scale of 1 to 7: 1-2=inadequate, 3-4=minimally adequate, 5-6=good, and 7=excellent.

Changes in Parent Characteristics

The implementation evaluation also assessed the extent to which the program was achieving several of its goals for parents, such as making child care more accessible and thus less stressful for parents, allowing parents to work more hours, and providing continuity of care which would eliminate the need for multiple care situations as well as

decrease the number of times parents missed work because of failure in child care arrangements.

Over the study period, there was a small increase in the percent of full-time working mothers, and a decrease in the number of unemployed mothers, but this was the case for both the intervention and comparison groups. There were no changes in the amount of hours that intervention group mothers worked, on average, but comparison group mothers decreased their out-of-home work hours by about 6-8 hours/week.

Parent responses indicated that the program seemed to be achieving its goal of continuity of care. Those parents who used 21C child care reported that they used it for most, if not all, of their out-of-home child care needs. Children who were not in 21C child care spent most of their out-of-school time in family day care and/or in care by a relative, which are the two most frequently used types of child care arrangements by mothers of young children in this country (Hofferth et al., 1991), and also unfortunately among the most unregulated arrangements and the most likely to be of poor quality (Kagan & Cohen, in press). Therefore for some families, 21C seemed to be replacing lower quality child care options and multiple arrangements.

For the entire intervention sample, there was not a consistent decrease in the percentage of parents who missed work because of failure of child care arrangements, but parents did spend less money on child care per week. Subset analyses of parents who were in the study for all three years revealed that there were decreases in the percent of parents who reported missing work because of failure of child care arrangements—for parents of preschoolers, the percentage decreased from 34% in year two, to 21% in year three, to 0 in year four. For parents of school-age children, the percentage decreased from 25% in year two, to 0 in years three and four. In the comparison group, 20% of parents of school-age children reported missing work during all three years of the evaluation.

Parent Stress. Studies have shown that the correlation between receiving family support services and changes in parenting is not always strong (e.g. Reis et al., 1989). Changes in parent stress were measured because of the well-documented relationship between negative parent attitudes and behaviors and high levels of parent stress (Abidin, 1992). Both intervention and comparison group parents said they felt guilty about being away from their child during the day, but most agreed that their child benefited from the social experience and intellectual stimulation of preschool child care. Intervention group parents seemed less sure than comparison group parents of the benefits of placing their child in preschool child care, and more worried about not spending enough time with them. The intervention group parents may have been experiencing more conflict than comparison group parents about leaving their child in preschool partially because the 21C program was new and in its second year of operation while the child care program at the comparison school was in its sixth year of operation in 1989-90. Furthermore, many of the first participants in 21C were parents who were not satisfied with their child's previous daycare, and therefore may have been predisposed to be cautious about child care programs.

The Parent Stress Index (PSI) scores for parents in both the intervention and comparison groups (the scores for parents of preschoolers and school-age children in the intervention group were combined), across all the domains of the PSI did not indicate any above normal stress levels (see Table 2). From the third year to the fourth year, all stress levels in every domain decreased for both groups. T-tests showed that statistically significant decreases occurred for intervention group parents in the overall PSI sum, and for both intervention and comparison group parents in the parent domain.

Table 2
Parent Stress Index Scores

1990-91

1991-92

Domain

Intervention
Group†

Comparison
Group‡

Intervention
Group

Control
Group

PSI Sum

214.4

221.1

201.4*

205.3

Child Domain

95.7

100.0

90.4

95.4

Parent Domain

118.7

121.1

111.0*

109.9*

Life Stress

9.0

10.1

8.6

10.4

† parents whose children attended one of the Schools of the 21st Century, n=164

‡ parents whose children attended one of the comparison schools, n=61

* within-group differences from 1990-91 to 1991-92 were statistically significant at $p < .10$.

School Records

An analysis of the attendance records for the school-age children in the intervention and control schools showed no significant variations in the number of school absences. For all four schools in the study, mean yearly absences for Kindergarten through 6th grade ranged from 4 1/2 days to almost 7 days.

In the third year of the evaluation, achievement test scores, grades, and attendance records were collected from the schoolrecords for the school-age sample of children from both the intervention and the comparison schools. Achievement test scores were measured for both the intervention and comparison groups by the Missouri Master and

Achievement Test (MMAT), a battery of criterion-referenced achievement tests given to students in grades 2 through 10. Tests for second grade covered only reading/language arts and mathematics, while tests for grades 3 through 10 covered those areas plus science and social studies/civics. The baseline data (see Table 3) showed that the intervention group had higher test scores than the comparison group across most subject areas. T-tests showed that the only statistically significant differences, however, were the higher scores of the intervention group students in 2nd grade reading and language arts, and in 3rd and 4th grade math and science.

Table 3
Student Missouri Mastery Achievement Test (MMAT) Scores

Mean MMAT Scores (sample size)

Subject Area-Grade

Intervention Group†

Comparison Group‡

Reading - 2

72.3 (105)*

56.9 (20)

Language Arts - 2

78.9 (105)*

60.6 (20)

Math - 2

79.1 (105)

71.0 (19)

Reading - 3

70.4 (78)

60.6 (12)

Language Arts - 3

74.8 (78)

66.5 (12)

Math - 3

69.4 (78)*

50.0 (12)

Science - 3

79.6 (77)*

59.3 (12)

Social Studies - 3

72.7 (77)

61.9 (12)

Reading - 4

63.2 (50)

64.5 (18)

Language Arts - 4

62.6 (50)

63.5 (18)

Math - 4

71.5 (50)*

46.6 (18)

Science - 4

70.5 (50)*

54.7 (18)

Social Studies - 4

69.3 (50)

62.9 (18)

Reading - 5

57.6 (34)

61.2 (11)

Language Arts - 5

58.5 (34)

61.5 (11)

Math - 5

61.4 (34)

57.5 (11)

Science - 5

65.8 (34)

53.9 (11)

Social Studies - 5

64.4 (34)

66.0 (11)

† students who attended one of the Schools of the 21st Century

‡ students who attended one of the comparison schools

* mean differences between the intervention and comparison group were statistically significant at $p < .10$.

A second subgroup analysis compared 21C participants to non-21C participants in the intervention sample. For the most part, the results showed neither significant differences nor detectable patterns among children who attended 21C schools, according to whether or not they participated in 21C before- and after-school care, preschool, and flip-flop Kindergarten services. The only significant difference was the higher score of 5th grade 21C participants in social studies (see Table 4).

Table 4

Student Missouri Mastery Achievement Test (MMAT) Scores:

Mean MMAT Scores (sample size)

Subject Area-Grade

Non-21C Participants†

21C Participants‡

Reading - 2

72.1 (61)

72.6 (44)

Language Arts - 2

79.4 (61)

78.2 (44)

Math - 2

78.4 (61)

80.0 (44)

Reading - 3

68.2 (48)

73.9 (30)

Language Arts - 3

72.4 (48)

78.6 (30)

Math - 3

68.1 (48)

71.6 (30)

Science - 3

80.2 (47)

78.8 (30)

Social Studies - 3

71.5 (47)

74.6 (30)

Reading - 4

65.0 (33)

59.6 (17)

Language Arts - 4

66.2 (33)

55.6 (17)

Math - 4

74.5 (33)

65.6 (17)

Science - 4

74.4 (33)

63.0 (17)

Social Studies - 4

72.4 (33)

63.2 (17)

Reading - 5

58.2 (25)

55.8 (9)

Language Arts - 5

59.5 (25)

55.8 (9)

Math - 5

61.8 (25)

60.1 (9)

Science - 5

65.0 (25)

68.0 (9)

Social Studies - 5

60.2 (25)

76.8 (9)*

† students who attended a School of the 21st Century but who do not participate in before-school care, after-school care or preschool.

‡ students who attended a School of the 21st Century and were enrolled in before-school care, after care and/or preschool.

* mean differences between 21C participants and non-participants were statistically significant at $p < .10$.

Discussion/Analysis

Implementation lessons. According to the responses of the principals, staff and teachers who administered, coordinated, or worked in schools with the 21C program, the program was successfully integrated into the school system by the fourth year of implementation. However, the findings highlighted several lessons relevant for future implementation of 21C or similar school-service models. One lesson was the importance of what O'Connor (1995) referred to as "contextual factors"--conditions under which a program can be most successful. This analysis demonstrated that support and participation by all school personnel was a facilitating factor in program implementation. Although the integration of the 21C model seemed to be going smoothly by the fourth year of implementation, it took a while to gain the support of the teachers. In Independence, teachers were not involved in the planning or design of the program, and in fact were unaware of the program's existence until school started in the fall of 1988. As a result, teachers were skeptical and critical of the program, and it took several years to properly integrate the program into the school and win the support and approval of teachers. Including both teachers and staff and other relevant personnel in a service program from its planning phase allows the development of a supportive working relationship early in the implementation process.

Another lesson was that space and scheduling issues would have benefited from being addressed in the planning process. While locating child care in the school does have economical and convenience benefits, it also has the potential of creating conflict over classroom noise levels, staff hours and the sharing of classrooms and other resources. These types of challenges seem to be more easily addressed in the planning phase, when personnel and classroom location decisions are being made.

A third issue which this study demonstrated was that significant and substantial improvements in the quality of child care programs can be made with proper evaluation and feedback, and the willingness and ability of the staff to respond appropriately to the suggestions of child development professionals. Assessing each child care component with a comprehensive instrument such as the ECERS does a good job of highlighting the weaknesses and strengths of a particular program; it provides the staff with specific suggestions about how to make their program more developmentally appropriate, and what specific areas need attention. With information from the ECERS evaluation, the staff of the 21C prechools made structural, activity and interactional improvements that gradually improved the quality of child care.

Making quality standards a program goal is important for fostering this type of improvement. Of the three school-age child care programs, the comparison school's program had been in existence the longest--8 years at the time of the third year of evaluation. It was, however, considered to be the least developmentally appropriate program of the three. This highlights the important role that 21C or similar models can play in improving the quality of child care. The model focuses on the development of high quality child care at the inception of the program; and it supports continued monitoring, evaluation and improvement of the program from year to year in order to

ensure access to constructive early learning experiences which are so important for a child's optimal growth and development.

Outcomes

The use of 21C child care was associated with several positive changes in parents' outcomes, for example, parents spent less money on child care, missed work markedly less because of problems with child care arrangements, and experienced a decrease in stress related to parenting. A study of a School of the 21st Century program in another state also found that participation in year-round, full-day child care for children ages 0-5 was associated with a decrease in parental stress (McCabe, 1995). Since the association between high parent stress and negative parenting attitudes and behaviors has been well documented (e.g. Abidin, 1992) the ability of a program to substantially decrease parent stress has the potential of making a significant contribution to improving the parent-child relationship which in turn has implications for the child's academic, emotional, psychological, and social development.

The achievement data was collected in order to facilitate the tracking of achievement scores as the program develops. As changes in scores are tracked over time, the school will be able to get a sense of how their students' achievement may be affected by the existence of the 21C model in their school. The outcomes reported here are preliminary at best and can only be used to hint at the possible impact of the School of the 21st Century on students, parents and schools. There is an early indication, for example, that the program has an impact on student achievement. Students in the intervention group had higher academic achievement scores in some subject areas than the students in the comparison group.

Also of interest, however, was the absence of significant differences in achievement scores. Within the intervention schools, there were few significant differences in achievement between students who participated in 21C and those who did not. Further study is needed to substantiate and clarify these findings, but these results could be interpreted several ways. It could be suggestive that 21C child care does not contribute to academic achievement more than other child care arrangements or, alternatively, that the 21C program does have a positive impact; if the students who did not participate in the School of the 21st Century had no need for it because one of their parents did not work outside the home, then perhaps 21C child care had a role in maintaining the achievement scores of students whose scores might otherwise have suffered due to sub-optimal developmental experiences they may have encountered by staying borne alone or spending time in poor quality care.

Conclusion

This study of the implementation of a pilot School of the 21st Century model showed that the program can be implemented without any major obstacles, and that it offered an effective, affordable method of providing quality child care and other educational programs to families and children. It also highlighted the importance of addressing space and scheduling issues in the initial stages of implementation, and involving both

staff and teachers in the planning process in order for them to develop collaborative relationships as early as possible.

The School of the 21st Century model has since been replicated across the country in 500 schools in 16 states, and also been successfully combined with other school reform efforts.

To build on the preliminary evidence of the impact of 21C, evaluations that are more comprehensive need to be conducted, which document the long-range effects of the 21C service delivery model on children, parents, and the school community. The study needs to be of sufficient size, scope and duration to enable generalizations to schools that differ by race/ethnicity, economic composition, community settings and degree of implementation. The proliferation of school reform models in the face of ever decreasing school resources makes it necessary for schools to choose among programs. Evaluations of school reform models like this one help to provide decision makers with the information they need in order to determine if a program is right for their school community. Ideally, research on this and other child care and early education programs will continue to provide us with the crucial feedback that we need in order to improve programs for young children and their families and to provide them with the best possible opportunities for support, growth and development.

References

Abidin, R.R. (1983). *The Parenting Stress Index, 3rd Edition: Professional Manual*. Odessa, FL: Psychological Assessment Resources.

Abidin, R.R. (1992). The determinants of parenting behavior. *Journal of Clinical Child Psychology*, 21, 407-412.

Barnett, W.S. (1985). *The Perry Preschool Program and its long-term effects: A benefit-cost analysis*. High/Scope Early Childhood Policy Papers, No.2. Ypsilanti, MI: High/Scope Educational Research Foundation.

Berrueta-Clement, J.R., Schweinhart, L.J., Barnett, W.S., Epstein, A.S., & Weikart, D.P. (1984). *Changed lives: The effects of the Perry Preschool Program on Youths through age 19* (Monographs of the High/Scope Educational Research Foundation No.8). Ypsilanti, MI: High/Scope Press.

Bochner, S. (1974). Reliability of the Peabody Picture Vocabulary Test: A review of 32 selected research studies published between 1965 and 1974. *Psychology in the Schools*, 15(3), 320-327.

Bronfenbrenner, U. (1979). *The ecology of human development: Experiments by nature and design*. Cambridge, MA: Harvard University Press.

Brown, P. (1995). The role of the evaluator in comprehensive community initiatives, pp. 201-225, in J.P. Connell, A.C. Kubisch, L.B. Schorr, & C.H. Weiss (Eds.), *New approaches to evaluating community initiatives: Concepts, methods, and contexts*. Washington, DC: Aspen Institute.

Campbell, F.A. & Ramey, C.T. (1994). Effects of early intervention on intellectual and academic achievement: A follow-up study of children from low-income families. *Child Development*, 65, 684-98.

Carnegie Corporation of New York. (1996). *Years of promise: A comprehensive learning strategy for America's children*. New York, New York: Author.

Casper, L.M., Hawkins, M. & O'Connell, M. (1991). Who's minding the kids? Current population reports, *Household Economic Studies*, P70-36. U.S. Department of Commerce, Economics and Statistics Administration, Bureau of the Census.

Center for the Future of Children. (1995). *The future of children: Long-term outcomes of early childhood program*, 5.

Center for the Future of Children. (1992). *The future of children: School-linked services*, 2.

Comer, J.P. (1993). *School Power*. New York: Free Press.

Comer, J.P. (1980). *School power: Implications of an intervention project*. New York: Free Press.

Comer, J.P., Haynes, N.M. & Hamilton-Lee, M. (1988). School power: A model for improving black achievement. *Urban League Review*, 11, 187-200.

Connell, J.P. & Kubisch, A.C. (June, 1996). Applying a theories of change approach to the evaluation of comprehensive community initiatives: Progress, prospects, and problems. Paper prepared for the Aspen Institute, Washington, DC.

Cook, T.D. & Campbell, D.T. (1979). *Quasi-experimentation: Design and analysis issues for field settings*. Boston: Houghton Mifflin Company.

Cost, Quality, and Child Outcomes Study Team. (1995). *Cost, quality and child outcomes in child care centers. Executive Summary*. Denver: University of Colorado.

Darlington, R.B., Royce, J.M., Snipper, A.S., Murray, H.W., & Lazar, I. (1980). Preschool programs and later school competence of children from low-income families. *Science*, 208, 202-208.

Dunn, L.M. & Dunn, L.M. (1981). *Manual, Forms L and M: Peabody Picture Vocabulary Test-Revised*. Circle Pines, MI: American Guidance Service.

Epstein, W.M. (1997). Social science, child welfare, and family preservation: A failure of rationality in public policy. *Children and Youth Services Review*, 19,41-60.

Farquhar, S. (1989). Assessing New Zealand child day care quality using the Early Childhood Environment Rating Scale. *Early Child Development and Care*, 47, 93-105.

Felner, R., Jackson, A., Kasak, D., Mulhall, P., Brand, S. & Flowers, N. (1997). The impact of school reform for the middle years: Longitudinal study of a network engaged in Turning Points-based comprehensive school transformation. *Phi Delta Kappan*, 78, 528-532.

Fight crime. Invest in kids. (1997). After school crime or after school programs. Report to the U.S. Attorney General. Washington, DC: Author.

Finn-Stevenson, M. & Stern, B. (1996). CoZi: Linking early childhood and family support services. *Principal*, 6-10.

Harms, T. & Clifford, R.M. (1980). *Early Childhood Environment Rating Scale*. New York: Teachers College Press.

Haskins, R. (1989). The Efficacy of Early Childhood Education. *American Psychologist*, 44 (2), 274-282.

Hofferth, S.L., Brayfield, A., Deitch, S., & Holcomb, P. (1991). National child care survey, 1990. Washington, DC: The Urban Institute.

Hollister, R.B. & Hill, J. (1995). Problems in the evaluation of communitywide initiatives, pp.127-172, in J.P. Connell, A.C. Kubisch, L.B. Schorr, & C.H. Weiss (Eds.), *New approaches to evaluating community initiatives: Concepts, methods, and contexts*. Washington, DC: Aspen Institute.

Howrigan, G.A. (1988). Evaluating parent-child interaction outcomes of family support and education programs, pp., 95-130. In H.B. Weiss & F.H. Jacobs (Eds.), *Evaluating family programs*. New York: Aldine de Gruyter.

Kagan, S.L. (1991). *United we stand: Collaboration for child care and early education services*. New York: Teachers College Press.

Kagan, S.L. & Cohen, N.E. (in press). Solving the quality problem: A vision for the early care and education system. A final report of the Quality 2000 Initiative. New Haven: Yale University.

Karweit, N.L. (1989). Effective preschool programs for students at risk. In R.E. Slavin, L. Karweit, & N.A. Madden (Eds.), *Effective programs for students at risk*, 75-102. Boston: Allyn and Bacon.

Kubisch, A.C., Weiss, C.H., Schorr, L.B., & Connell, J.P. (1995). Introduction (pp. 1-21), In J.P. Connell, A.C. Kubisch, L.H. Schorr, & C.H. Weiss (Eds.), *New approaches to evaluating community initiatives: Concepts, methods, and contexts*. Washington, DC: Aspen Institute.

Long, L. & Long, T.J. (1982). *Latchkey children* (Contract No.400-76 0008). Washington, DC: National Institute of Education.

Lovejoy, M. & Westheimer, M. (1993). *Voices from the field: A case study of one inner-city HIPPY program*. Paper prepared for the Council of Jewish Women's Center for the Child.

McCabe, S. (1995). *A Program Evaluation: Does the center project effectively reduce parental stress? An unpublished dissertation*: University of Colorado at Denver.

Miller, B.M. (1994). *Out of school time: Effects on learning in the primary grades*. Paper prepared for the Carnegie Task Force on Learning in the Primary Grades.

Miller, A.B. (1990). *The day care dilemma: Critical concerns for American families*. New York: Plenum.

O'Connor, A. (1995). *Evaluating comprehensive community initiatives: A view from history*, pp.23-63, in J.P. Connell, A.C. Kubisch, L.B. Schorr, & C.H. Weiss (Eds.), *New approaches to evaluating community initiatives: Concepts, methods, and contexts*. Washington, DC: Aspen Institute.

National Association of Elementary School Principals in collaboration with the Wellesley College School-Age Child Care Project. (1993). *Standards for quality school-age child care*. Alexandria, VA: Author.

Parents as Teachers. (1995a). *Parents as Teachers: Investing in Good Beginnings for Children*. St. Louis, MO: Author.

Parents as Teachers. (1995b). *A Select Review of Past and Current Evaluations of the Parents as Teachers Program*. St. Louis, MO: Author.

Pfannenstiel, J.C. & Seltzer, D.A. (1989). *New Parents as Teachers: Evaluation of an Early Parent Education Program*. *Early Childhood Research Quarterly*, 4, 1-18.

Pfannenstiel, J.C. (1989). *New Parents as Teachers Project A Follow-Up Investigation*. Jefferson City, MO: Missouri Department of Elementary and Secondary Education.

Posner, J.K. and Vandell, D.L. (1994). *Low-income children's after school care: Are there beneficial effects of after-school programs?* *Child Development*, 65, 440-456.

Powell, D.R. (1987). After-school child care. *Young Children*, 62-66.

Reis, J., Bennett, S., Orme, J. and Herz, E. (1989). Family support programs: A quasi-experimental evaluation. *Children and Youth Services Review*, 11, 239-263.

Richardson, J.L., Dwyer, K. McGuigan, K., Harrison, W.B., Dent, C., Johnson, C.A., Sussman, S.Y., Brannon, B., & Flay, B. (1989). Substance use among eighth grade students who take care of themselves after school. *Pediatrics*, 84(3), 556-560.

Sanders, J.R. (1992). *Evaluating school programs: An educator's guide*. Newbury Park, CA: Corwin Press.

Schweinhart, L.J., Barnes, H.V., & Weikart, D.P. with Barnett, W.S., & Epstein, A.S. (1993). *Significant benefits: The High/Scope Perry Preschool study through age 27*. (High/Scope Educational Research Foundation Monograph No.10). Ypsilanti, MI: High/Scope Press.

Seitz, V., Abelson, W.D., Levine, E., & Zigler, E. (1975). Effects of place of testing on the Peabody Picture Vocabulary Test scores of disadvantaged Head Start and Non-Head Start children. *Child Development*, 46 (2), 481-486.

Sparrow, S.S., Balla, D.A., & Cicchetti, D.V. (1985). *Vineland Adaptive Behavior Scales - Classroom Edition*. A revision of the Vineland Social Maturity Scale by Edgar A. Doll. Circle Pines, MI: American Guidance Service.

SRI International (1992). *Home, the First Classroom: A Pilot Evaluation of the Northern California Parents as Teachers Project*. Menlo Park, CA.

Stern, B.M. & Finn-Stevenson, M. (In press). The Comer/Zigler Initiative: Combining the School of the 21st Century with the School Development Program. In School Development Program National Staff and 3. Comer (Eds.), *Child by child, School by school: Strengthening our communities through educational change*. New York: Teachers College Press.

Tharp, R.G. & Gallimore, R. (1982). Inquiry process in program development. *Journal of Community Psychology*, 10, 103-118.

U.S. Department of Education. (1993). *National study of before and after school programs*. Portsmouth, NH: RMC Corporation.

Vandell, D.L., Shumow, L., and Posner, J.K. (in press). Children's after school programs: Promoting resiliency or vulnerability? In H. McCubbin (Ed). *Resiliency in families and children: Facing the challenges of the 21st Century*. Madison, WI: University of Wisconsin Press.

Weiner, P.S. (1971). Stability and validity of two measures of intelligence used with children whose language development is delayed. *Journal of Speech and Hearing Research*, 14 (2), 254-261.

Weiss, C.H. (1995). Nothing as practical as good theory: Exploring theory-based evaluation for comprehensive community initiatives for children and families, pp.65-92. In J.P. Connell, A.C. Kubisch, L.H. Schorr, & C.H. Weiss (Eds.), *New approaches to evaluating community initiatives: Concepts, methods, and contexts*. Washington, DC: Aspen Institute.

Whitebook, M., Howes, C. & Phillips, D. (1989). *Who Cares? Child Care Teachers and The Quality of Care in America: Final Report, National Child Care Staffing Study. Report of the Child Care Employee Project.*

Zigler, B. (1989). Addressing the nation's child care crisis: The School of the Twenty-First Century. *American Journal of Orthopsychiatry*, 59(4), 484-491.

Zigler, B. & Finn-Stevenson. (1996). Funding child care and public education. *The Future of Children*, 6(2), 104-121.

Zigler, B. & Finn-Stevenson. (1989). Child care in America: From problem to solution. *Educational Policy*, 3(4), 313-329.

Zigler, B. & Finn-Stevenson. (1995). The child care crisis: Implications for the growth and development of the nation's children. *Journal of Social Issues*, 51(3), 215-231.

Zigler, E.F., Finn-Stevenson, M. & Linkins, K.W. (1992). Meeting the needs of children and families with Schools of the 21st Century. *Yale Law & Policy Review*, 10(1), 69-81.

Zigler, E.F., Finn-Stevenson, M. & Marsland, K.W. (1995). Child day care in the schools: The School of the 21st Century. *Child Welfare*, 124, 1301-1326.

Zigler, E.F., Kagan, S.L. & Hall, N.W. (1996). *Children, families and government: Preparing for the Twenty-first century*. Cambridge University Press.

Zigler, E., & Valentine, J. (1979). *Project Head Start. A legacy of the war on poverty*. New York: Free Press.

Endnotes

1. The High/Scope Curriculum (Schweinhart, Barnes & Weikart, 1993), used in many preschools including most Head Start programs, has been shown to be very effective in promoting the optimal development of children. The curriculum uses active learning and employs a child-centered approach to teacher-child interaction. A comprehensive study of the High/Scope Perry Preschool Program, which employed the HighScope curriculum, demonstrated that program participants outperformed their peers academically and socially up to and including high school (Bamen 1985; Berrueta-

Clement et al., 1984), and through age 27, were 50% less likely to be involved in criminal activity, had significantly more earnings and property wealth, and were significantly more committed to marriage (Schweinhart, Barnes, & Weikart, 1993).

Similarly, many quality preschool programs have been evaluated and shown to have a positive impact on children's intellectual and social competence, as well as to decrease the chances of teen pregnancy, delinquency, welfare use, and unemployment (Haskins, 1989). A study of 11 separate preschool programs for low-income children showed that program participants, compared to non-participants, were significantly less likely to be placed in special education or be retained in grade in middle/junior high school (Carlington et al., 1980). In addition, many studies of the impact of high-quality preschool programs on disadvantaged children have shown that they significantly develop children's social and coping skills, reduce referrals to special education and retention rates, and improve children's learning during the early elementary grades, all of which are crucial in later academic and social success (Karweit, 1989).

2. The Parents As Teachers (PAT) (Parents as Teachers, 1995a) program, which began in Missouri in 1981 has been the subject of numerous evaluations. PAT is a voluntary home visitation program in which a trained child development specialist visits the parent monthly from the third trimester of pregnancy until the child is 3 years old. The specialist discusses child development and parenting techniques with the parent, makes recommendations about parent/child interactions, and provides information about age-appropriate behavior and toys for the child. Evaluations of the PAT program, which have included low as well as high risk families, have shown that PAT increases a child's school readiness, intellectual achievement, language ability, and social development, improves parents' knowledge of infants and child development, and increases parents' involvement with the child's schooling (Parents as Teachers, 1995b; Pfannenstiel and Seltzer, 1989; Pfannenstiel, 1989; SRI International, 1992). PAT has also been shown to have a value added effect above and beyond that of Head Start, in preventing delays in children's language development, social skills, and physical development, and in decreasing the welfare dependence of parents (reported in Parents as Teachers, 1995a).

3. In two states, Connecticut and Kentucky, enabling legislation provided necessary funds for start-up costs (Zigler & Finn-Stevenson, 1996).

4. For a more comprehensive overview of the program's philosophy, structure, and goals, see Zigler, 1989; Zigler & Finn-Stevenson, 1989; Zigler, Finn-Stevenson & Linkins, 1992; and Zigler, Finn-Stevenson & Marsland, 1995.

5. For further discussion of the role of social research in human services delivery, see Epstein, 1997.

6. It was necessary to choose comparison schools in Missouri because it is the only state in which all parents have access to the PAT program.

7. Although only two principals were involved in the 21C evaluation, we asked all of the elementary school principals in the district to respond to the survey. This was done primarily to gauge the extent of their knowledge of 21C, their desire to eventually implement all of the 21C components in their schools, and their perceptions of the benefits and challenges associated with the model.

8. One of the guiding principles of 21C is related to the development of a professional framework for child care providers, through upgrading staff salaries and providing career training, benefits and career opportunities. However, the Independence schools, which were the first in the nation to implement 21C, experienced during the first year of operation a great deal of animosity from the child care field. There was fear that by paying more, schools would take away the best providers and by offering good quality child care at a reasonable cost families could afford, that they would also take away clients. In order to work collaboratively within the community, the schools were unable to pay higher staff salaries (but they did offer staff benefits and training as well as regular pay upgrades).

9. For example, in 5 schools across the country the School of the 21st Century model has been combined with Dr. James P. Comer's School Development Program (Comer, 1993) to form the Comer/Zigler Initiative (CoZi) (Finn-Stevenson & Stern, 1996).

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