Early Childhood Programs in Other Nations: Goals and Outcomes

Sarane Spence Boocock

Abstract

United States interest in the potential early childhood programs have for improving outcomes for children is shared by policymakers and researchers in many other nations. Throughout the world, enrollments in preschool and child care programs are rising. This article reviews international research documenting how participation in early childhood programs influenced children’s later development and success in school. Studies conducted in 13 nations (Australia, Canada, Colombia, France, Germany, India, Ireland, Japan, Singapore, South Korea, Sweden, Turkey, and the United Kingdom) are included, along with key features of each nation’s provision of early childhood programs.

The article summarizes conclusions that are supported by research in various countries, indicating that participation in preschool promotes cognitive development and school success, although the specific type of program attended matters little. Preschool experience helps low-income children narrow, but not close, the achievement gap separating them from more advantaged children. International evidence also suggests that maternal employment and reliance on child care do not harm children and may yield benefits if the child care is of good quality. The author draws insights from the experience of other nations concerning such issues as defining quality, the effectiveness of early childhood programs in redressing social and economic inequities, and understanding how research can influence policy.

Although most of the research discussed in this journal issue pertains to early childhood programs in the United States, rising preschool enrollments and increased utilization of nonparental child care are worldwide trends. The demand for educationally oriented preschool services has been fueled by the growing awareness of the developmental importance of the early years of life; the years from three to five are increasingly seen as an auspicious time for children to begin their education. The economic pressures that promote employment by mothers have played a role as well. The author of a recent international review of early childhood education notes similarities between the United States and other countries: “increasing participation of mothers in the labor force, dwindling family size, and disap-
pearing extended-family support are almost worldwide phenomena.”¹ These conditions create a growing demand for out-of-home child care which matches that for preschool education.

The international interest in early childhood programs does not mean that preschool facilities and services are evenly distributed, however, either within or among countries. The overall availability and quality of preschool programs tend to be much higher in rich industrialized nations than in poor developing ones, yet large differences distinguish even nations that are geographically close and at similar levels of economic development. For example, almost 100% of French and Belgian children are enrolled in an educational preschool program by age three, compared with 28% of Spanish and Portuguese children of that age and less than 6% of Swiss three-year-olds.² In most nations, access to preschool facilities is much greater in urban centers than in rural areas, and enrollment rates for children from upper- or middle-class homes exceed those for poor children. Finally, government involvement in the provision of preschool services takes different forms, from full funding and direct sponsorship of programs to a more modest role of regulating programs provided by the private sector and paid for by parents.

Only recently has systematic international research begun to document the linkages between national policy, early childhood programs, and outcomes for children. A number of handbooks and reports describe child and family policies and offer estimates of preschool enrollments in various nations, but only a few discuss research on the effects of the programs they describe.³⁻¹⁰ The relationship between research and policy development varies across countries. For the most part, early childhood policies in other nations have evolved independently of the research foundation that has been so important in the development of U.S. early childhood policy.

The objective of this article is to complement the reviews of U.S. studies on the long-term outcomes of early childhood programs provided in this journal issue by examining comparable international research. The article begins with an overview of the research approaches most commonly used in the international literature on early childhood programs. Next, the purposes, designs, and findings of major studies undertaken in 13 countries are reviewed to identify common themes. Among the generalizations that emerge are these:

- There is widespread evidence that participating in a preschool program promotes cognitive development in the short term and prepares children to succeed in school.
There is no strong or consistent evidence that the form of the preschool experience (pedagogic approach, daily schedule, or setting) influences long-term outcomes for children.

Preschool experience appears to be a stronger force in the lives of low-income than more advantaged children.

Preschool attendance can narrow the achievement gaps faced by disadvantaged children, though most of these effects appear to diminish over time.

Maternal employment and participation in out-of-home child care, even during infancy, appear not to harm children and may yield benefits if the child care is regulated and of adequate quality.

Finally, the article draws insights from the international literature concerning several issues of early childhood policy and practice that are under debate in the United States: definitions and thresholds of program “quality,” the appropriateness of expecting preschool programs to redress socioeconomic inequities, and the diverse ways that research can contribute to policy formation.

International Research on Early Childhood Programs
This review includes 15 studies of early childhood programs conducted outside the United States during the past two decades, chosen particularly for the policy significance of their findings. These studies were conducted in Australia, Canada, Colombia, France, Germany, India, Ireland, Japan, Singapore, South Korea, Sweden, Turkey, and the United Kingdom. Two studies are included from 2 of the 13 nations.

Definitional Issues
There are, of course, formidable difficulties in comparing data collected in different countries. Many problems arise from differences in the way early childhood services are organized and defined. The early childhood programs examined in these studies served children ranging in age from birth to elementary school entry. Some provided child care for children with working parents, others prepared children for school entry, and others offered a broad set of health, developmental, and social services. The outcomes sought by the program designers and, to some extent, measured by researchers ranged from cognitive development and school success or failure to emotional development and social skills to the reduction of inequalities based on racial, ethnic, social class, and gender differences.

Most of the effects measured pertain to children, but a few studies also considered impacts on families.

In many but not all countries, a distinction is made between services labeled as child care versus preschool or kindergarten. “Care” usually refers to full-day programs for families with working parents, and it is often available to children of varied ages; while “preschool education” usually refers to part-day programs with an educational orientation that are reserved for children three or older. In addition, the two types of programs are likely to be administered by different government ministries or agencies. Figure 1 is a schematic diagram of the different programs and settings that children may experience before entering school. The distinction between preschool and child care programs is used in this article, though it is important to remember that the programs in each category vary in the age range of children who participate, the services delivered, and the level of public versus private funding and control.

Design Issues
In contrast with the U.S. studies reviewed in several other articles in this journal issue (see the articles by Barnett, Yoshikawa, and St. Pierre and colleagues), few of the international studies employed an experimental design with random assignment of children to program and control groups. This lack of randomization adds to the difficulty of
assessing the validity of the research findings because effects that are due to self-selection or other factors not under the researchers’ control may be erroneously attributed to a preschool program. It should be kept in mind that the following discussion will draw from research of varying quality and from data sets that are not always, strictly speaking, comparable.11

The studies included in this review fall into three major groups: large-scale surveys, studies comparing children with different child care or preschool experiences, and evaluations testing the impacts of particular early childhood programs or program models. Each study type is described briefly below.

**Large-Scale Surveys**
Surveys have been used in several nations to investigate whether exposure to preschool programs is associated with positive outcomes for children. The four surveys reviewed in this article have sample sizes of more than 1,000 children that were drawn to represent the residents of a nation (or some smaller jurisdiction). Some gathered data about the same children during early childhood and again later. Others focused on older children but included questions about the children’s past experiences to contrast groups with different exposure to preschool programs.

**Comparative Studies**
Comparative studies of existing programs are included in this review, as well. Relative to the surveys, these studies focus on smaller samples, and they gather more detailed information about children’s preschool experiences and later development. The four studies of this type took advantage of naturally occurring variations in children’s enrollment in early childhood programs to investigate how attending those typical programs contributed to, or hampered, children’s progress in school and other settings.

**Evaluations of Specific Program Models**
Seven of the 15 studies examined are evaluations of specific program models serving limited numbers of children. In some instances, several program models are contrasted; in all these studies, control groups that received no early childhood program are also included. As noted earlier, the children were seldom randomly assigned to the program or control groups which, as Barnett discusses in his article in this journal issue, is generally

---

**Figure 1**

**Early Childhood Care and Education Settings**

- **Children ages 0 to 5**
  - **Home settings**
    - Own home
    - Kin
    - Maid
    - Own parents
  - Home of another
  - Informal caregiver
  - Licensed family child care home
- **Center settings**
  - Playgroup (periodic)
  - Child care (full day)
  - Preschool (part day)


“Preschool education” usually refers to part-day programs with an educational orientation for children three or older.
considered the most rigorous research design. More often the researchers found comparison groups in neighboring communities or among slightly older children.

All three types of studies can serve policy purposes. For instance, the findings of surveys have helped justify the adoption of national policies, such as the French government’s investment in universal preschool to prepare children to succeed in public school. Research that documents the quality of diverse early childhood programs can guide decisions concerning government regulation and financing. And evaluation studies can demonstrate the potential that exemplary early childhood programs have to improve outcomes for particular groups of children.

In the late 1980s, a major comparative study, the Victoria Day Care Research Project, examined 105 children who were using one of the major types of child care available in Canada: child care centers, care in the homes of regulated family child care providers, and care by unregulated home caregivers. The Victoria study compared the experiences of children in those three care settings and found high correlations among family resources, the quality of the child care setting, and children’s cognitive and social development. Children who attended child care centers tended to have higher levels of language development and more highly developed play and activity patterns than children in family child care homes.

Across settings, the quality of care exerted more influence on the development of lower-class than middle-class children.

—Canada

The quality of care in family child care homes was more variable than center care, and it was a more potent predictor of children’s language development—that is, children in high-quality homes developed well, while those in less adequate homes developed much more poorly. Family child care that was regulated by government authorities was of better quality than that offered in unlicensed homes, even though the regulations were “minimal” and not vigorously enforced.

Across settings, the quality of care exerted more influence on the development of lower-class than middle-class children. The researchers pointed out that in Canada, as in the United States, child care often exacerbates socioeconomic inequities rather than reducing them. Many children in the study experienced the “worst of both worlds” in that they came from low-resource families and attended low-quality family child care. To date, however, the longitudinal data needed to assess the long-term effects of these early Canadian child care experiences have not been gathered.

North America

Canada

Because of its geographic proximity and its similar level of economic development and cultural diversity, Canada’s approach to early childhood care and education seems especially relevant to the United States. While neither country has a national early childhood policy, Canada’s social welfare policies and programs are more inclusive and generous than those of the United States, though they are less so than those of most European countries. Systematic policy research is a relatively recent development in Canada, however.

Research Findings by Geographic Area

The following sections of this article discuss the results of the 15 studies chosen for review, by region and by country within region. Table 1 provides basic information regarding the studies, arrayed by the research approach used in each. Not surprisingly, the studies selected are disproportionately from the wealthier, more economically developed nations that can afford to support more early childhood programs and services, and to conduct research on their effects.

Western Europe

The most highly developed early childhood systems may be found among the nations comprising the European Community plus the Nordic nations. Outside the United
### Table 1

**International Research Studies of Early Childhood Programs Across Thirteen Nations**

<table>
<thead>
<tr>
<th>Country/Related Endnote Number</th>
<th>Birth Year of Subjects</th>
<th>Sample size</th>
<th>Purpose of Study</th>
</tr>
</thead>
<tbody>
<tr>
<td>Large-Scale Surveys</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>France12</td>
<td>1970</td>
<td>20,000+ children</td>
<td>Identify impact of amount of preschool on retention at end of first grade.</td>
</tr>
<tr>
<td>United Kingdom13</td>
<td>1970</td>
<td>9,000 children</td>
<td>Identify impact of type of preschool attended (if any) on educational achievement and behavior in school.</td>
</tr>
<tr>
<td>Germany14</td>
<td>Late 1970s</td>
<td>203 schools</td>
<td>Identify impact of availability of preschool spaces on rates of promotion and placement in special education.</td>
</tr>
<tr>
<td>Japan15</td>
<td>1956–1957</td>
<td>4,000 children</td>
<td>Identify impact of attendance at preschool, child care, or no program on achievement test scores at fifth grade.</td>
</tr>
<tr>
<td>Comparative Studies</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Canada16</td>
<td>Circa 1980</td>
<td>105 children</td>
<td>Identify differences in the development of children attending centers or family child care.</td>
</tr>
<tr>
<td>Australia No.119</td>
<td>Mid-1980s</td>
<td>8,471 children</td>
<td>Identify impact of early child care use on school readiness and on social and emotional problems.</td>
</tr>
<tr>
<td>Evaluations</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ireland20</td>
<td>Mid-1960s</td>
<td>90 in program 60 in control group (children in control group are five years older)</td>
<td>Assess impact of two-year preschool program on disadvantaged children’s school and life success.</td>
</tr>
<tr>
<td>South Korea21</td>
<td>Late 1970s</td>
<td>121 in program 31 in control group</td>
<td>Assess impacts of five kindergarten curricula on development and school success.</td>
</tr>
<tr>
<td>Colombia22, 23</td>
<td>Late 1960s</td>
<td>301 in program 154 in control group</td>
<td>Assess the effects of receiving health, nutrition, and preschool program for one, two, three, or four years on the health, cognitive ability, and retention in grade of malnourished children.</td>
</tr>
<tr>
<td>India No.134</td>
<td>Late 1980s</td>
<td>120 in program 120 in control group</td>
<td>Assess impacts of preschool program on children’s health, cognitive ability, behavior, and school readiness.</td>
</tr>
<tr>
<td>India No. 225</td>
<td>Early 1980s</td>
<td>214 in program 205 in control group</td>
<td>Assess effects of comprehensive nutrition, health, and preschool program on cognitive ability and school attendance.</td>
</tr>
<tr>
<td>Australia No. 226</td>
<td>Early 1970s</td>
<td>225 in program 101 in control group</td>
<td>Assess effects of comprehensive nutrition, health, and preschool program on school success.</td>
</tr>
<tr>
<td>Turkey27</td>
<td>1978–1980</td>
<td>251 across groups</td>
<td>Assess impact of educational child care and maternal training on cognitive ability, school success, and attitudes.</td>
</tr>
</tbody>
</table>

---

See the related endnote following this article for the complete citation.

Birth years of subjects were estimated based on information provided in the referenced reports.
States, this is also the area of the world from which information about preschool programs and their effects is most readily available. The opening of national frontiers for trade and travel has been accompanied by an increased sharing of information and collaborative research, although each nation’s policies and programs retain distinctive characteristics that reflect historical and cultural differences. Here, five of the most often cited European studies are reviewed, including surveys, comparative studies, and an evaluation. Several studies traced the effects of various types of child care and preschool education for periods up to 12 years.

**France**

A prime example of how survey research can contribute to policy development is provided by the studies conducted by the French Ministry for Education in 1983 and 1990 to gauge the effects of large-scale expansion of the preschool system on later success in school. The French *école maternelle*, or nursery school, is now attended by close to 100% of all three- to five-year-olds and a growing number of two-year-olds. Preschool teachers in France have the same training, civil service status, and salaries as primary school teachers. The popular full-day programs emphasize academic activities, and group sizes and child-teacher ratios tend to be large by American standards. (The average is 25 children per class with one teacher, but as many as 35 may be included.)

The impetus for the expansion of the *école maternelle* system during the 1970s and 1980s was concern over the large number of children who had to repeat first grade or who otherwise fell behind in primary education. (See the article by Entwisle in this journal issue for discussion of similar concerns in the United States.) To discover whether participating in preschool influenced retention in first grade, the government launched a survey of a national sample of 20,000 students who were sixth graders in 1980, comparing those who had attended preschool for one, two, or three years before entering school.

The survey findings indicated that every year of preschool attended reduced the likelihood of school failure, especially for children from the most disadvantaged homes. Each year of preschool narrowed the retention rate gap between children whose fathers were in the highest occupational category and those with unemployed or unskilled fathers. That gap was 30% for children with one year of preschool, 27% for those with two years, and only 24% for those with three years in preschool. (Those differences may seem small, but the very large sample size makes them quite reliable estimates of truly different experiences.)

The survey showed that children from higher-status homes and children in urban areas had the most preschool experience and were more likely to be promoted on schedule; however, the subsequent expansion of the *école maternelle* is likely to have reduced these disparities. Now most French children participate in preschool.

**United Kingdom**

A similarly massive survey, the Child Health and Education Study (CHES), examined the effects of naturally occurring preschool and child care programs in the United Kingdom, a nation with a much more diverse early childhood system than the French. Estimates are that 44% of British three- and four-year-olds attend public or private nursery schools, and many children enter public school classes at age four. Public investment in full-day child care is limited; many families rely on individual caregivers, called childminders, who may or may not be registered with the government. Children who have a parent at home during the day often attend organized play groups several times a week.

The CHES is a longitudinal study that followed the development of all the approximately 9,000 children born during one week in 1970. Researchers collected data on cognitive functioning, educational achievement, and behavior ratings by mothers and teachers when the children were 5 and 10 years...
Comparisons among children who attended play groups, private or public nursery schools, or no preschool at all showed that experience in any preschool (including play groups) contributed to cognitive development and school achievement throughout the period studied. Disadvantaged children gained slightly more from attending preschool than did more advantaged children. Contrary to the researchers' expectations, preschool experience did not affect aspects of children's socioemotional development, such as self-concept, skill in getting along with other children, or their ability to apply themselves to schoolwork.

The researchers concluded that preschool experience per se had more influence on children's subsequent development than the type of preschool attended: "Provided the child receives proper care, has interesting activities and other children to play with (which are common elements in the majority of preschool institutions), the actual type of preschool experience matters very little."30

Germany
A related policy study using different methods was conducted in 1987 in the former West Germany, a country where 65% to 70% of children between three and six attend half-day preschools (called kindergartens) that are provided by the government at no cost to parents.31 To evaluate whether providing preschool opportunities increases elementary school success, researchers analyzed statistics routinely collected by schools, including the percent of children retained in grade or assigned to special education in grades one to four, as well as community factors such as population density, socioeconomic status, and the number of preschool places available in the school district. The study combined data from 203 elementary schools in one West German state, and it produced results very similar to the French and British surveys described above.14

Elementary schools in districts with high preschool availability had lower rates of retention in grade and assignment to special education, suggesting that attending preschool improved children's readiness for school and promoted their educational success. Paralleling the British study findings, no other factor studied (including socioeconomic status) influenced school outcomes as consistently as having some preschool experience. The German researchers concluded, like their French colleagues, that a major benefit of a well-established preschool system is to ease the transition into elementary school.

Sweden
Systematic studies of Swedish child care—sometimes called the most advanced system in the world—have been carried out since the mid-1960s.32 Given that 86% of Swedish mothers with preschool-aged children are employed,33 it is not surprising that programs offering full-time child care are the centerpiece of the Swedish early childhood system. Local governments provide carefully supervised, subsidized child care through centers and family child care homes to approximately 47% of children between birth and school entry at age seven, although many infants are cared for by their parents during paid parental leaves.

By comparison with the French, British, and German surveys described above, most Swedish studies use small but carefully designed samples, and they collect data that allow detailed comparisons of existing programs. Often, researchers treat child care as just one among several environments that affect children's development and well-being, and they attempt to examine the influences of child care and home care simultaneously.

Chosen for this review is a study that followed a sample of 128 Swedish children born in 1975 from age 3 to age 13 (with an 89% retention rate).17 The mothers reported their children's child care experiences during infancy. The results show distinct advantages to children of participating in early nonparental child care. Whether they attended centers or family child care homes, children placed in out-of-home care before age one had greater verbal facility and were rated as more persistent and independent,
less anxious, and more confident than children cared for at home or children placed in child care at a later age. The study's lead investigator concluded that “early entrance into day-care tends to predict a creative, socially confident, popular, open, and independent adolescent.”

Two other Swedish studies have yielded similar findings. Together, these studies suggest that nonparental care of adequate quality, even for infants and for long periods of time, need not have adverse effects on children’s development and well-being.

These impressive outcomes partly reflect the fact that Sweden has a national policy of providing public child care that is well funded and supported by regulations regarding staffing patterns and training, group size, daily routines, and the design of the child’s environment. This does not mean that all centers are identical; indeed, Swedish child care environments differ considerably in such characteristics as group composition, atmosphere, and staff experience and working methods. Government funding and oversight ensure that variations between programs stay within specified limits and do not fall below an agreed-upon threshold of quality.

Overall, the Swedish studies found the quality of care provided in children’s own homes a better predictor of subsequent development than variations in preschool experience or the more crude measure of family socioeconomic status. These studies used fine-grained measures of the quality of home care, focusing on interactions between parents and children rather than on simple measures such as whether the mother works. The surprising finding that family socioeconomic status is relatively unimportant may reflect the fact that in Sweden differences between families in socioeconomic status, like differences in the quality of preschool facilities, are relatively small. By contrast, in Canada and the United States, both family socioeconomic status and program quality vary widely, and research shows that both variables have substantial effects on children’s development. Research findings like these can serve to remind policymakers of the importance of ensuring that positive developmental experiences are available to children wherever they spend their time.

Ireland

The last study from Western Europe differs from the others in examining an experimental program that targeted children living in an impoverished area of Dublin. Based upon developmental theory and influenced by U.S. compensatory education programs like those described in this journal issue, the Dublin project offered a two-year, half-day preschool program to 90 children who were age three in 1969. The purpose of this program was to enhance the children’s cognitive development, learning skills, and personality and social development, and it sought to involve parents in their children’s preschool experience by including home visits by teachers and social workers.

Measures of cognitive development, school achievement, and parent involvement were collected at ages 5, 8, and 16 on the program participants and a control group of 60 children from the same neighborhood. The participating children showed significant improvements on standardized tests at age 5. The greatest benefits appeared among the least able children and among girls rather than boys. At age 8, however, most of those initial gains were not maintained.

By secondary school, the preschool participants were more likely than nonparticipants to remain in school, and they were two to three times more likely to take the examinations required for further education. However, there were no differences between the groups in employment or in the percent who had been in trouble with the police (about 20% of each group). These mixed results led the researchers to conclude that “the extent of the problems—social as well as educational—which children experience in a disadvantaged
area" limits the power of a single intervention to bring about change.\textsuperscript{37}

Summary
As noted earlier, Western Europe offers a relatively solid research foundation for policymakers who make decisions concerning early childhood programs. The large-scale studies of French, British, and German preschool systems provide evidence that preschool attendance, under the “normal, everyday conditions of a well established preschool service,” can have strong positive effects on children’s school readiness and their subsequent academic performance.\textsuperscript{38} This seems to be true whether the preschool system is relatively uniform, as is true of the French \textit{école maternelle}, or is characterized by much greater diversity in institutions and programs, as occurs in Germany and Britain. More focused studies of the development of Swedish children who entered child care early in life confirm that early childhood programs can benefit children—especially when these programs are high in quality.

The evidence from Ireland on a compensatory program targeted at disadvantaged children reveals a mixed pattern of effects similar to many early childhood intervention evaluations in the United States. Initial positive effects on children’s cognitive development and school performance tapered off over time, leaving some long-term effects on schooling but few impacts on employment or crime.

East Asia and the Pacific Rim
East Asia and the Pacific Rim contain some of the world’s most highly developed nations, educationally as well as economically. In Japan, Singapore, South Korea, Hong Kong, and Taiwan—nations that share a common heritage of Confucian values in a context of rapid industrial growth—most children attend preschool by age three, and many preschool programs focus on preparing children for the academic demands of school. For example, the participation of more than 90% of Hong Kong’s three- to six-year-olds in preschool has been explained this way: “This high proportion reflects the value that the Chinese traditionally attach to education, but it also reflects the economic and educational situation. . . . Formal schooling is an important avenue to social and economic mobility, and preschool is perceived as the first step

\begin{quote}
Formal schooling is an important avenue to social and economic mobility, and preschool is perceived as the first step along this avenue.
\end{quote}
\textit{—Hong Kong}
along this avenue.” When attendance at preschool programs is so high, the attention of policymakers and researchers turns to questions of program design and approach, and the studies from Japan, Singapore, and South Korea reviewed here all compare the effects of different preschool programs on child outcomes.

This region of the world also includes Australia and New Zealand, nations that share a heritage and style of government with the United States, Canada, and the United Kingdom. There the demand for full-time child care to assist working parents is strong, but the government role in preschool and child care programs has grown more slowly.

**Japan**

In a pattern that resembles many North American and Western European countries, the Japanese system of early childhood services is broken into two parts: (1) *yochien*, or preschools, are primarily private, part-day programs designed to prepare three- to six-year-old children for elementary school; and (2) *hoiku-en*, or child care programs, are government-subsidized, full-day programs for children of all ages from families deemed “in need” by government authorities. Table 2 is a comparison between the two types of Japanese preschool service. Currently, more than 90% of Japanese children attend one or the other program before they enter elementary school.40

Although Japanese government agencies maintain accurate records on enrollments, staff, and equipment, and there is a veritable flood of philosophical works on child rearing and early childhood education, virtually no research has been conducted on the effects of different types of preschool programs. In 1975, a retrospective study of 4,000 fifth graders addressed the question of whether preschool experience is associated with higher scores on national achievement tests. The sample included about equal numbers of children who had attended *yochien*, *hoiku-en*, or neither type of program.

The study found that children with preschool experience of either type had higher test scores than those who attended no preschool, but that this relationship was affected by family economic status. Overall, children who attended *yochien* preschools received the highest test scores. Lower-class children did best if they had attended the full-day subsidized *hoiku-en*, and they were not helped by attending the *yochien*. The authors speculated that the academic preschool programs were less suited to the needs of lower-class children than the full-day programs which offered a range of services. This conclusion echoes the Canadian study by emphasizing the fit between the needs of low-income children and the characteristics of the early childhood programs they attend.

**Singapore**

Singapore is a highly urbanized, multiethnic society with three official languages. Nearly all children attend preschool, most (more than 70%) participating in programs offered by the dominant political party, though programs operated by other parties and by private organizations are considered more innovative.

In 1983, a nine-year study was launched by the national Institute of Education to produce a developmental profile of the nation’s preschool children, compare the outcomes of different types of preschools, and develop a plan for improving preschool curriculum and teacher training. A sample of 2,413 three- to six-year-olds, randomly selected from Singapore’s preschools, were observed and tested over a two-and-one-half-year period. The study’s results indicated that preschool experience prepared children to handle academic tasks in elementary school, and it improved children’s skills at sharing and cooperating—a valued benefit in a society in which most children come from one- or two-child families.

The study also focused on mastery of English because it is the language used in...
most Singapore elementary schools. Children who attended private preschools performed better on English language tasks than their peers in the dominant party’s preschools, perhaps because those who attended private preschools had better-educated parents who spoke English at home. By age six, all the children had begun to learn English, and the researchers concluded that this bilingualism does not hinder the cognitive and social development of Singapore’s children.

South Korea
A longitudinal study of kindergartens conducted in South Korea during the mid-1980s also explored the effects of different early childhood educational models on children’s development. This study examined 121 children who attended four urban kindergarten classrooms using different educational approaches, and compared them with 31 children who had no kindergarten experience. Data about the children’s cognitive and socioemotional development and about their school achievement were gathered in kindergarten and at grades four and seven. Although the research design is weakened by nonrandom assignment of children to the different classes, the study has an eight-year follow-up period and the retention rate was high.

The study results show that, during the kindergarten year, the four curricular approaches yielded different patterns of school readiness, but the distinctions between the programs faded by fourth grade and were gone by seventh grade. However, significant benefits distinguished the kindergarten groups from the control group on all the measures except the children’s intelligence quotient (IQ). The study’s conclusion that the long-run advantages of any preschool experience are large relative to the differences between forms of preschool education unites this South Korean study with the British and German research discussed earlier.

Australia and New Zealand
The Pacific Rim nations that are closest to the United States racially, linguistically, and culturally—Australia and New Zealand—have both experienced sharply increased demand for early childhood programs. In New Zealand, 42% of children under five attend part-day preschool programs, 16% attend full-day child care programs, and another 23% are enrolled in part-time play

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Preschools</th>
<th>Child Care Centers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jurisdiction</td>
<td>Ministry of Education, Science, and Culture</td>
<td>Ministry of Health and Welfare</td>
</tr>
<tr>
<td>Basic role</td>
<td>Academic instruction</td>
<td>Welfare facility for working parents</td>
</tr>
<tr>
<td>Children to be admitted</td>
<td>Preschoolers over age three</td>
<td>Infants and preschoolers in need of child care</td>
</tr>
<tr>
<td>Hours per day</td>
<td>Four hours a day is standard</td>
<td>Eight hours a day in principle</td>
</tr>
<tr>
<td>Admission criteria</td>
<td>Private contract with parents or guardian; sometimes there are entrance examinations</td>
<td>Placement by municipalities through the assessment of parents’ or guardians’ income</td>
</tr>
<tr>
<td>Curricular content</td>
<td>Promoting children’s health, social relations, care of the environment, language, and expression</td>
<td>Basic care, emotional stability, health, social relations, environment, language, and expression</td>
</tr>
<tr>
<td>Number of children served</td>
<td>2,041,820 (May 1988)</td>
<td>1,784,193 (October 1987)</td>
</tr>
</tbody>
</table>

centers operated by parents. In Australia, it is estimated that 32% of children ages three to five attend part-day preschool programs and another 20% are in child care centers. Both countries have also undertaken systemic reforms, propelled by increasing rates of maternal employment and the growing insistence of indigenous peoples and other disadvantaged groups that their preschool needs be met.

Two Australian studies are included in this review. The first evaluates a program for disadvantaged families which resembles many United States compensatory education programs. The second is a larger study of links between the early experience of child care and children’s socioemotional development.

The Mt. Druitt Project was launched in the mid-1970s to serve families living in a low-income public housing project. A total of 225 children received a year of preschool services through one of five models (including a home-based approach as well as four center-based models), although assignment to the groups was not randomized. The children were followed by researchers until the end of first grade and compared with control children identified during preschool and kindergarten.

The Mt. Druitt study results showed that the preschool children performed better than the control groups when they entered public kindergarten, but their superiority dissipated by the end of first grade. An unexpected family-level benefit also emerged: the parents who participated in the home-based program established a network to organize other social, educational, and welfare activities independent of the project. The study outcomes must be interpreted with caution because assignment to experimental or control groups was not random and the children were not followed past first grade. However, the positive but short-lived effects that attending preschool had on children’s cognitive development parallel those found in the Dublin project described earlier.

A second Australian study reflects the attention paid in Australia and New Zealand to the effects of child care availability and quality on women’s lives. The Australian Early Childhood Study gathered data from 8,471 urban mothers of first-year elementary schoolchildren, focusing on children’s social and emotional problems that are symptomatic of a lack of readiness for school. The results indicated that participating in non-maternal child care, even in the first year of life, did not put children at greater risk of developing these problems. Family background factors and the mothers’ satisfaction with their lives had greater effects on the children’s socioemotional development and school readiness than did maternal employment and the exposure to child care that follows from it.

A New Zealand review of research on the outcomes associated with children’s participation in early childhood programs (called “educare”) found a number of benefits for parents, including enhanced relationships with children, alleviation of maternal stress, upgrading of education or training credentials, and improved employment status. Studies such as these can play an important policy role by increasing acceptance of out-of-home child care for young children.

**Summary**

This review of studies conducted in Asian and Pacific Rim countries illustrates the wide variety of policy questions that are addressed through research on early childhood programs. The Japanese, Singapore, South Korean, and Mt. Druitt studies focused on the impacts that participation in preschool programs had on school success, either by comparing two broad types of early childhood programs (child care and academic preschool in Japan), or examining a variety of specific preschool models. These studies confirmed the European research finding that attending preschool yields benefits, but the particular character of the preschool program matters less.
The Australian study of maternal employment and out-of-home child care echoes findings of Swedish child care research that aspects of the home environment affect children’s social and emotional development as much as or more than the experiences they have in child care.

### Developing Nations in Latin America and Asia

The past two decades have seen a multiplication of efforts to expand preschool services in the developing nations of Latin America, Asia, and Africa, where preprimary education is sometimes viewed as a strategy for promoting national development. Preschool projects in the developing world are often funded by outside sources (private foundations, the World Bank, or UNESCO and UNICEF), and they are increasingly employing an approach that engages local communities in the design, operation, and evaluation of the programs.44

One of the major barriers to school success for poor children in developing nations is that many suffer from malnutrition and health problems, and preschool programs often link nutritional supplements and health education with programs offering cognitive or psychosocial stimulation.45,46 This review includes examples of several early childhood studies conducted in developing nations that have adequate research designs and include data about effects on children. All of these are evaluations of specific programs, not assessments of widely available services, because the availability of early childhood programs in most developing nations remains limited.

### Columbia

The most systematic intervention and research program in the developing world has focused on malnourished, low-income children in Cali, Colombia. The Cali Project is a preschool program integrating nutrition supplementation, health surveillance, child care, and educational components.22,23 A sample of 301 malnourished, extremely poor children were randomly assigned to groups who began receiving the program at ages three, four, five, or six years, or not at all. The longitudinal evaluation compared these children with control groups and examined how the duration of the treatment affected physical growth, cognitive development, and retention in grade until the children reached 10 years of age.

All the experimental groups in the Cali Project improved more in cognitive ability than the control group of low-income children, and the size of a child’s cognitive gains was related to the length of the treatment the child received. Modest IQ gains persisted to age eight, and treatment group children were somewhat more likely to be promoted throughout the first three grades in school. Children who received nutritional supplements without participating in the preschool activities made significant gains in height and weight, but their cognitive abilities did not improve until they entered the preschool part of the program.

Interpreting these long-term effects is difficult because the children attended 93 different elementary schools that varied in curriculum and quality, but this study provides the best evidence available regarding
the potential of well-designed, comprehensive preschool interventions for fostering both physical and mental growth among chronically deprived children.

India

This review includes two studies from India because the contrast between them illustrates a basic dilemma facing a populous nation attempting to upgrade its preschool system. Education at all levels is a critical challenge in India, where only about 50% of the children enrolled in school complete the first year, in part because child labor remains prevalent, and girls often stay home to care for their younger siblings.47 These stark conditions provide the context into which Indian preschool programs must fit.

The Village Preschool Study evaluates the effectiveness of a set of 49 relatively high-quality, foundation-funded child care centers. A two-year longitudinal study compared 120 children in six villages who attended the programs with a matched sample of 120 who did not attend.24 The pattern of findings showed more favorable results on a variety of developmental measures for the children who attended the centers, but many of the differences were not statistically significant. Even more conclusive results from a private program serving only 2,200 children, however, would have had little resonance in a nation as large and challenged as India.

Paraprofessional workers gather between 20 and 40 children in anganwadi (literally, courtyard) centers. In 1987–88, there were more than 88,400 centers, reaching 4.6 million children from birth to six years old. —India

Studies of hundreds of children conducted in 1986 and 1987 gathered information about the health and school performance of participants and comparison children. Results suggest that the programs can claim some successes in reducing infant mortality, malnutrition, and morbidity, as well as school repetition and dropout. Still, most of the anganwadi centers operate at “a minimum level of quality,”10 and estimates are that only 12% of India’s children are reached by any early childhood assistance.47

Turkey

A strong emphasis on education is common to many developing nations, including Turkey, where free, compulsory primary schooling is provided for children 6 to 14 years old. Less than 2% of children under 6 now attend an organized preschool program, although government planning documents embrace the goal of enrolling 10% of the nation’s children in preschool programs.48

During the late 1980s, researchers designed a study to test the effects on children and parents of two interventions: (1) an adaptation of Home Instruction Program for Preschool Youngsters (HIPPY), a home enrichment program in which paraprofessionals train mothers to work with their preschool-aged children on educational activities, and (2) participation in existing child care programs offering either educational or only custodial care.27 The longitudinal study included 251 low-income families with children 3 to 5 years old who received different combinations of treatments, and data about the children’s cognitive development, social development, and school achievement were gathered 4, 7, and 10 years later.

Overall, the findings showed that children who attended the educational child care programs outperformed children in custodial child care and home care on almost all measures of cognitive development. Similarly, children whose mothers received the HIPPY training surpassed control groups of children on cognitive devel-
development and school achievement. The group that experienced both educational child care and home instruction by mothers had the highest scores. The maternal teaching program was especially beneficial for children who did not have access to a quality preschool program. Of course, the results of this study must be interpreted with caution because assignment to groups and treatments was not random.

The analysis also found direct effects of the HIPPY training on mothers: “... compared with the control group of mothers, trained mothers were found to enjoy a higher status in the family vis-à-vis their greater participation in decision making in the family as well as more role sharing and communication with their spouses. They also had more say in child discipline.” The authors conclude that their findings offer support for a model of “intersecting needs of women and children” rather than for a model that assumes conflicting needs.

Summary
While these studies from developing nations were all designed to evaluate the effects of specific programs on outcomes for children, the character of the programs evaluated and, hence, the study findings differ considerably. Studies in Colombia and India found that multidisciplinary programs providing health, nutritional, and developmental services to young children promoted physical growth, health, and performance in school.

A smaller demonstration project in India suggested that early childhood education models originally developed for industrialized, Western nations can be adapted for countries at different stages of development. The Turkish project demonstrated the benefits of combining developmental child care with activities designed for parents—an outcome that links it with the research on maternal employment and child care conducted in Australia and Sweden.

In many ways, the findings of the international research reviewed here confirm basic conclusions drawn in the research on early childhood programs conducted in the United States. Attendance at preschool programs is associated with cognitive gains and improved performance in school the world around, and it also appears that having some preschool experience matters more to children than exposure to any particular curriculum or program model (as long as the program is not of very poor quality, as are some forms of child care in the United States). Researchers in other countries have also found that disadvantaged groups benefit more from early childhood programs than do children from more advantaged backgrounds, so that early childhood programs can help close the gaps in achievement that separate children from different socioeconomic strata. This, of course, is the idea that lay behind the Head Start program in the United States.

Lessons for Americans
It is ironic that the United States—the nation that has made the largest investment in rigorous research on the effects of early childhood programs—should have one of the world’s most fragmented systems for administering those programs. Some observers see good reasons for the variety and complexity of U.S. early childhood pol-
What Constitutes “Quality” in Early Childhood Programs?

There is now ample evidence from well-designed studies in a number of countries that experience in early childhood programs of good quality does not harm children, even very young ones. On the contrary, well-established preschool services provide numerous benefits to children and their families. The most positive outcomes, however, have been found in countries with a national policy of providing preschool services to all children and a tradition of ensuring the quality of those services through enforceable regulations. These conditions do not now exist in the United States.

This does not mean that there is a global consensus on what constitutes a quality program (see the article by Frede in this journal issue for a discussion of U.S. conceptions of quality). One fundamental disagreement contrasts a child-centered or “developmentally appropriate” model of early childhood education which emphasizes play with a view of preschool as a downward extension of formal schooling which introduces children to serious learning as early as possible. The child-centered model originated in Western societies and is not embraced by some other cultures. For example, free play is explicitly rejected in New Zealand preschools operated by Maori groups, and by many parents and teachers in industrialized Asian nations.

Moreover, a number of the indicators of quality considered most essential by American evaluators are accorded less importance elsewhere. For example, U.S. research on quality in early childhood programs routinely includes data about staffing ratios and group sizes and compares existing practices to the standards set by professional organizations. Small groups and low child-to-staff ratios are considered hallmarks of quality. In contrast, many high-quality programs in other countries—including the French école maternelle, most Japanese yochien, and the highly regarded program in the Italian town of Reggio Emilia—routinely use class sizes and child-to-staff ratios that violate U.S. standards.

Conceptions of what constitutes quality in early childhood programs may also reflect the values that are promoted in different societies. In Barnett’s review of U.S. research on early childhood programs in this journal issue, he found that the outcomes of children’s cognitive development and school achievement were emphasized more heavily than their development of social skills. In 1970, Urie Bronfenbrenner, a leading scholar who observed programs in the United States and the Soviet Union, warned that programs in the United States were missing important opportunities by “failing to utilize the constructive potential of the peer group in developing social responsibility and consideration for others.”

Similarly, a more recent ethnographic study comparing a single preschool in the United States (Hawaii) with ones in Japan and the People’s Republic of China concluded that what set the Asian preschools most apart from the American one was the importance they placed upon group life. Japanese parents, for example, “send their children to preschool not just for child care and not just so the children can learn to modify their behavior to conform to the demands of society but, more profoundly, to facilitate the development of a group-oriented, outward-facing sense of self.” Even taking into account differences in cultural values, evidence from several East Asian nations indicates that it is possible to make children’s socialization to group life a central focus of preschool programs without sacrificing later academic success.

Can Early Childhood Programs Reduce Educational Inequities?

Research from a number of nations that vary economically, socially, and politically suggests that large-scale national efforts to expand preschool systems at reasonable levels of quality can reduce rates of early school failure. Preschool experience also seems to do more to boost the performance of disad-
vantaged children than of those who are better off. At the same time, there is little evidence that either typical preschool programs or experimental interventions can reduce the unequal opportunities that often confront children from different social and economic backgrounds.

This is not surprising given that such social inequalities are affected by policy decisions that are made on political grounds. The most disadvantaged groups tend to have the least political power, and so their needs—even for high-quality early childhood programs—often go unmet. For instance, one researcher who has reviewed early childhood programs from an international perspective offers this analysis: “Although early intervention programs are part of many nations’ plans for social and political reform, in many instances insufficient funding and an inadequate vision result in a system of understaffed, ill-equipped, and poorly housed programs. . . . the result is often a substandard public system of early education that serves the needs of a few poor children and their families, and a separate usually higher quality private service for the middle and upper class.”

Providing substandard programs to disadvantaged children is unlikely to change their lives.

**Can Research Make a Difference?**

It was noted earlier that the United States dominates the world in the quantity and quality of its research on early childhood programs, yet the weight of empirical evidence showing the benefits of such programs has not produced the political will to support a universal system of high-quality services. Researchers who have compared child and family policies in the United States and several European nations concluded that research has played the largest role in guiding policy and practice in those nations where it “starts with a policy choice made and uses child effects as the vantage point for designing ever more satisfactory programs.” This review of research from different nations illustrates the varied ways in which research can influence policies and underscores the importance of paying close attention to the political processes by which public policy is created and carried out. (See, for example, the article by Zervigon-Hakes in this journal issue.)

Most reviews of research on early childhood programs end with a call for more research with large and representative samples, using experimental designs and long-term follow-ups. This review suggests the value of combining a variety of research approaches. Pure experimental designs with random assignment to experimental and control groups are rarely found, especially in nations with limited resources to devote to early childhood services, so it is important to glean knowledge from other types of research as well. Long-term follow-ups offer many advantages, but they risk diminishing relevance: what “worked” for children in the socioeconomic context of the 1970s may not apply to children in the 1990s. Large-scale surveys like the British and French studies are informative, yet their findings are more valuable if they are complemented by smaller-scale studies involving detailed observations that reveal the processes by which long-term outcomes are produced.

As this review suggests, much can be gained from between-nation exchanges of information and collaboration on research projects. Decisions about early childhood policy and programs are, increasingly, made under conditions that are truly international in scope and impact. For instance, intense pressures to economize on preschool services by reducing government support or relaxing standards are being felt worldwide, even in nations like Sweden and France where programs are well established and have wide public support. A greater willingness to learn from the experiences of others may be the only way to gain the knowledge needed to design preschools that can withstand the social, political, and economic forces that affect children’s lives everywhere.


30. See note no. 13, Osborne and Milbank, p. 239.

31. See note no. 8, Moss, p. 10.


34. See note no. 17, Andersson, pp. 32–33.


37. See note no. 20, Kellaghan and Greaney, p. 21.

38. See note no. 14, Tietze, p. 151.


49. See note no. 27, Kagibcibasi, p. 17.


51. See note no. 1, Olmsted, p. 24.

52. See note no. 43, Wylie, p. 27.


56. See note no. 50, Kamerman and Kahn, p. 122.
