From Preschool to Prosperity

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Chapter 7

A Proposed Early Childhood Education Strategy

Based on research, what early childhood education strategy would provide the greatest economic benefits? This chapter proposes three programs, suggests methods for quality control, and considers possible roles of the federal government versus state and local governments.

The proposed programs are

1. Universal full-day pre-K available to all four-year-olds, with teachers paid public school wages and with relatively small class sizes of around 15 children for 2 teachers;

2. Targeted full-time, full-year child care and pre-K available for all disadvantaged children from birth to age five, modeled after the Abecedarian and Educare programs;

3. Targeted parenting services for first-time disadvantaged mothers and their children from the prenatal period until age two, modeled after the Nurse Family Partnership.

FULL-DAY UNIVERSAL PRE-K FOR FOUR-YEAR-OLDS

Considering the pre-K proposal first, why this design? First, universal access, regardless of family income, would maximize aggregate economic impact. As discussed in Chapter 5, the available research evidence suggests that providing pre-K at age four to children from middle-class families has a high ratio of future earnings benefits to costs. If universal pre-K’s benefits in future earnings are similar in dollar terms for most of the income distribution, then the aggregate economic impact of pre-K increases roughly proportionately with the number of children enrolled, and is greatest with universal access. A universal program would still be significantly redistributional, as the
future earnings benefits would be a much greater percentage boost for children from lower-income families.

Furthermore, the broader the pre-K access, the greater the spill-over benefits in increasing the economy’s productivity and most workers’ wages (see Chapter 6). Higher skills for children from both lower-income and middle-income backgrounds would spill over to benefit the other group.

Universal access to pre-K might also provide positive peer effects in pre-K classrooms, increasing pre-K’s effectiveness for lower-income children. Research suggests pre-K children benefit from having peers with higher skills. The spillover is 20 percent: Including more kids with higher test scores increases the class test scores by 20 percent more than predicted based on the direct effect (Henry and Rickman 2007).68 No one thinks that the ideal pre-K design is income-segregated “separate but equal” programs. Yet this is what we do when we have Head Start limited to poor children, state programs targeting the near-poor, and private pre-K programs serving the upper class.

Universal access pre-K is likely to have broader political popularity. However, the primary rationale for universal access is not political expediency, but larger economic benefits.

A full-day pre-K program is likely more attractive to many families, because it minimizes child care costs and hassles of arranging wraparound child care. This easier access will increase program take-up rates and thereby aggregate economic impact. A full-day program does have somewhat lower bang for the buck than a half-day program. But the incremental benefits of full-day programs over half-day programs exceed costs even if take-up rates do not increase. The higher take-up rate adds additional economic benefits.

The universal program would be restricted to age four because there is no research on the benefits of age three pre-K for middle-class children. As discussed below, age three pre-K for disadvantaged children would be provided by a targeted program.
The pre-K program would lean toward being overfunded for high quality, by paying public school wages and having low class sizes. As discussed in Chapter 5, the research on these “structural” quality features is inconclusive. But it is prudent to imitate the pre-K programs with the greatest success, such as Perry, Chicago CPC, Tulsa, and Boston, which pay high salaries and have modest class sizes.

**TARGETED EDUCARE/ABECEDARIAN FOR ALL DISADVANTAGED CHILDREN**

In addition to universal pre-K, the proposal includes an Educare/Abecedarian program offering free education-oriented child care and pre-K full-time from six weeks of age up to age five to the neediest children. The income targeting of this program is justified by the research that suggests that such comprehensive child care provides significant benefits only for children from lower-income backgrounds. The Educare/Abecedarian model would be used because it has the most extensive research evidence.

The 26 percent adult earnings boost from Educare/Abecedarian is over two-and-a-half times the 10 percent earnings boost that disadvantaged children might get from full-day pre-K. Table 7.1 shows that adding on Educare to full-day pre-K for disadvantaged children has added earnings benefits that exceed the added costs. The benefit-cost ratio for this addition is only slightly above one, but the dollar

<table>
<thead>
<tr>
<th>Table 7.1 Benefits versus Costs per Child of Adding Educare to Pre-K</th>
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</thead>
<tbody>
<tr>
<td><strong>Full-day pre-K</strong></td>
</tr>
<tr>
<td>-------------------</td>
</tr>
<tr>
<td>Earnings benefits</td>
</tr>
<tr>
<td>Program costs</td>
</tr>
<tr>
<td>Ratio of benefits to costs</td>
</tr>
</tbody>
</table>

NOTE: Benefits and costs are rounded to the nearest thousand, in present-value 2012 dollars. The first two columns of numbers come from Table 3.1. The third column subtracts age four pre-K benefits and costs from Educare benefits and costs. SOURCE: Author’s calculations, as explained in text and endnotes.
net benefit per child is sizable. These dollar benefits are targeted at a needy group, while the taxes would be raised from wealthier groups.

In addition to these direct earnings benefits for former child participants, the extra skills from Educare will add to spillover benefits. Also, five years of full-day child care will have much higher benefits for parental earnings.

**NURSE FAMILY PARTNERSHIP FOR ALL DISADVANTAGED FIRST-TIME MOTHERS**

The proposal includes full funding for Nurse Family Partnership services for everyone in the program’s target group, which is disadvantaged first-time mothers. The services would be income-targeted because of the research evidence that the NFP is most effective for this group.

The NFP is included because it has the most extensive research evidence for long-term benefits among parenting programs. However, local areas would be given options for experimenting with alternative parenting programs that show some evidence of success.

**COSTS**

This proposal’s costs are presented in Table 7.2. Universal pre-K is assumed to enroll 74 percent of all four-year-olds, similar to Oklahoma’s program. Educare is assumed to be funded sufficiently to be open to all children under five from families below the poverty line, which is 25 percent of all children. Three-quarters of all such families are assumed to take up this offer. The NFP is assumed to be funded sufficiently to provide assistance from the prenatal period to age two for all first-time mothers whose family income is below 185 percent of the poverty line (the cutoff used in the federal school lunch program); about 44 percent of all children are below this income line, and about 30 percent of these low-income children are first-born children. Three-quarters of these first-time mothers are assumed to participate in the program.
### Table 7.2 Annual National Costs of Large-Scale Early Childhood Education Proposal

<table>
<thead>
<tr>
<th>Program</th>
<th>Number of children</th>
<th>Annual gross costs</th>
<th>Net costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Universal pre-K for 4-year-olds</td>
<td>3.0 million</td>
<td>$31 billion</td>
<td>$25 billion</td>
</tr>
<tr>
<td>Educare, birth to 5, for poor children</td>
<td>3.7 million</td>
<td>$68 billion</td>
<td>$58 billion</td>
</tr>
<tr>
<td>NFP for disadvantaged first-time moms</td>
<td>0.9 million</td>
<td>$4 billion</td>
<td>$4 billion</td>
</tr>
<tr>
<td>Adjusted for pre-K overlap</td>
<td>(0.8 million)</td>
<td></td>
<td>($8 billion)</td>
</tr>
<tr>
<td>Total</td>
<td>6.3 million</td>
<td></td>
<td>$79 billion</td>
</tr>
</tbody>
</table>

**NOTE:** Annual costs per child are $10,050 for universal pre-K, $18,381 for full-time child-care pre-K, $4,500 for home-visiting/parenting. Net costs are lower than gross costs because of cost savings on existing early childhood programs. Cost savings for universal pre-K are $6 billion for state pre-K. Cost savings for Educare are $8 billion for Head Start and $2 billion for child care subsidies. Cost savings for the NFP are $0.4 billion in Affordable Care Act funding for home-visiting. Total costs are adjusted for overlap between pre-K services under universal pre-K versus Educare for four-year-olds below the poverty line. Number of participants is adjusted for this overlap, and for children in both home-visiting and full-time child care programs.

**SOURCE:** Author’s calculations, as explained in text and endnotes.
Some cost offsets for these programs occur because of savings on funds currently spent on state pre-K programs, Head Start, and federal child care subsidies. In addition, there is some overlap between the programs, which would save on costs if all three programs were implemented, specifically in pre-K services for four-year-olds below the poverty line.

All three programs would cost just under $80 billion annually. Over six million children would receive services. Most costs would be for Educare, followed by universal pre-K.

How large are these costs? These costs are 2.0 percent of total combined federal, state, and local taxes; 3.1 percent of total federal taxes; and 5.6 percent of total state and local taxes. This would represent a significant but feasible increase in state and local tax efforts, but it would be less of a stretch if participated in by all levels of government. The $79 billion total cost is 13 percent of what is currently spent on public K–12 education (National Center for Education Statistics 2013). Therefore, such an expenditure would represent a considerable increase, but not an outlandish increase, in what is spent on public education.

AGGREGATE BENEFITS

As suggested by previous chapters, this total expenditure of $79 billion annually would increase the present value of future earnings of former child participants by a multiple of between two and three times these program costs. Spillover benefits due to peer effects and agglomeration effects might be more than double the direct effects on former child participants. Anticrime benefits might be at least as valuable as the earnings benefits. Dynamic effects of expanded early childhood education on U.S. growth rates, as well as second generation effects, would further increase these economic benefits. In the long run, this proposal is likely to be self-financing, certainly after 50 years or so. But the problem is how to finance, set up, and manage these investments in the short run and the medium run, over the next 50 years.
This proposal would also make a considerable dent in U.S. income inequality. From 1979 to 2007, the real income growth of the lowest-income quintile and the real income growth of the middle-income quintile both lagged behind the average per-household income growth. Growth in average income per household is higher because it includes the extra real income growth of the highest-income quintile (including the highest 1 percent of earners), which has captured much of the long-term growth in the United States.

The income growth trends imply that for the lowest-income quintile from 1979 to 2007 to have matched the growth of average household income, its 2007 income would have to be boosted by 19 percent. For the middle-income quintile from 1979 to 2007 to have matched the growth of average household income, its income would have to be boosted by 24 percent. To eliminate these gaps through increased earnings requires higher-percentage increases in earnings, as earnings are only a portion of household income. The required earnings boosts for the lowest-income quintile and the middle-income quintile both turn out, by coincidence, to equal a 31 percent boost in real earnings.

What could this proposal do to counter these adverse trends in U.S. income inequality? As outlined in previous chapters, full-day pre-K might raise average earnings for the middle class by 5 percent. Therefore, by itself, universal pre-K would offset one-sixth (5 percent divided by 31 percent) of the lagging income growth of the middle class over the last 30 years. Educare from birth to age five might boost average earnings of children from low-income families by 26 percent. This would offset five-sixths (26 percent divided by 31 percent) of the lagging income growth of the lowest-income quintile over the past 30 years. To this would be added a 3 percent earnings boost from the NFP for the 30 percent of low-income children who are first-born children. Early childhood education cannot by itself permanently solve the income inequality problem, but it does make a considerable dent in offsetting recent inequality trends.
ACCOUNTABILITY AND QUALITY IMPROVEMENT

Large benefits of early childhood education depend upon high quality. The funding levels per child outlined above are sufficient for high quality, but they provide no guarantee.

To check on program quality, outcomes for program participants should regularly be measured relative to a comparison group that is similar in observed and unobserved preexisting characteristics. For universal pre-K, this comparison can be done using the “regression discontinuity” methodology, as discussed in Chapter 2. Universal pre-K participants would be tested both at pre-K entrance and at kindergarten entrance. If pre-K has an impact, this should be apparent in a “jump”—a discontinuity—in test scores at the age cutoff for kindergarten entrance.

For Educare and the NFP, outcomes for program participants should be measured by comparing the targeted low-income group with similar children whose family income is slightly above the cutoff for the program. If these programs have an impact, the outcomes for children just below the income cutoff should be elevated relative to outcomes for children just above the income cutoff.

While cognitive test scores are useful for monitoring overall program quality, heavy reliance on cognitive test scores may be problematic as a tool for accountability for individual classrooms or teachers. As discussed in previous chapters, much of the impact of early childhood education comes from the program’s long-run effects on social skills and character skills. The initial boost to cognitive skills is important in helping lead to these long-run effects. But the initial boost to social and character skills is also important. As discussed in Chapter 2, the initial boost to cognitive test scores tends to underpredict long-run earnings effects, which suggests that something else is going on. An accountability system for individual early-childhood teachers that relies too much on cognitive test-score gains may lead teachers to underemphasize social and character skills.
A promising alternative accountability system for individual classrooms and teachers would rely on outside observers, who would provide an objective assessment of the quality of teacher-student interactions in the early childhood classroom. Such observer ratings are predictive of test score gains. Yet most observer ratings focus not just on cognitive skills, but also on whether the classroom climate develops social and character skills. In addition, an observer rating system, compared to an accountability system based solely on cognitive test scores, provides more useful immediate feedback to teachers.

Such observer rating systems might usefully be supplemented by teacher mentors who work with classroom teachers. After an observer rating, mentors can provide teachers with advice and training on how to improve.75 Such observer rating systems and teacher mentoring offer promise for improving the quality of pre-K and child care programs. Observer audits and mentoring might also be used to improve the quality of home-visiting/parenting programs.

WHAT LEVEL OF GOVERNMENT SHOULD BE RESPONSIBLE FOR EARLY CHILDHOOD EDUCATION?

An important issue is how responsibility for early childhood education should be divided among federal, state, and local governments. Where possible, we should explore whether responsibility can feasibly be assigned to state and local governments, for several reasons. First, the federal government has a lot on its plate. Health care and an aging population will absorb a great deal of federal money and attention. Federal resources are limited and should be focused on program elements for which the federal government has special comparative advantages over state and local governments.

Second, the federal government can sometimes be more bureaucratic than state and local governments. Over-rigidity in government is a particular problem for early childhood education, which needs experimentation with new program designs.
For universal pre-K, state and local government responsibility for the financing of basic operations seems feasible because the benefits of universal pre-K are mostly local. Over 60 percent of all Americans spend the bulk of their working careers in the state in which they spent their early childhoods (Bartik 2011). If a state invests in universal pre-K, about three-quarters of the increased earnings from this investment will accrue to workers who stay in the state.76

State and local areas that outcompete other areas in offering universal pre-K may obtain some extra benefits in higher property values. Even if people do not fully understand the value of universal pre-K, we know that people value higher elementary-school test scores in the housing market, because research studies have consistently found that a similar house will sell for more if it is assigned to a school with higher test scores. From the estimated effects of higher test scores on higher property values, and the estimated effects of pre-K on higher test scores, we can estimate that universal pre-K would be expected to increase property values by at least six times the annual program costs (Bartik 2011, Table 7.3). This benefits all local property owners, not just parents, which helps broaden local support. The increased local property-tax revenues might also increase the incentive for local governments to invest in pre-K.77

State and local responsibility for universal pre-K also seems feasible because the cost is modest compared to current state responsibilities. The $25 billion cost of universal pre-K would add only 1.75 percent to overall state and local taxes. This cost is also only 4 percent of what is currently spent on K–12 education.78

The federal government may have a comparative advantage in supporting some universal pre-K components, such as the evaluation and training components described previously. What is learned from evaluating a particular program benefits the entire nation, not one state or local area. Furthermore, self-evaluation by a state of its own programs is politically challenging. Federal standards and financing for evaluation can help encourage evaluations to have greater quality and objectivity. Finally, because quality is hard to measure, there may
be some political temptation for state and local governments to overstate program quality and under-invest in quality improvement. Federal financial support and standards for quality improvement can help offset this temptation. For all of these reasons, the quality of universal pre-K is likely to be improved if there is generous federal financial support for a testing-and-outside-observer evaluation system, and for teacher mentors.

For early childhood education programs that are targeted at the poor, such as Educare and the NFP, greater federal responsibility may be necessary. The interests of the poor often have limited political clout in state and local policy. Whether justified or not, state and local policymakers often fear that income redistribution may repel middle-class and upper-class state residents, while attracting lower-class residents. Educare plus the NFP would cost $62 billion annually, which is 4.4 percent of overall state and local taxes. Although this is a modest tax increase, it is a hard sell for a proposal whose direct benefits are limited to low-income families. If high-quality child care for the poor is ever to become a reality in the United States, the federal government will probably have to play a major role in providing the needed funds.

CONCLUDING COMMENTS

Research evidence supports a proposal that would provide some direct benefits from universal pre-K for all families, while providing extra services at earlier ages for low-income families. Involvement by all levels of government in financing the system can be justified. Higher quality for these programs should be promoted by adequate financial support, program monitoring, and training.