

Shepard Barbash Pre-K Can Work

Needy kids could benefit, but only if we use proven pedagogy and hold programs accountable.
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Anyone who has taught young children knows how daunting it can be to keep the attention of a roomful of four-year-olds, much less teach them anything. Parents and taxpayers thus have reason to worry that the federal government, having spent hundreds of billions of dollars trying to improve the nation's public schools—with little to show for it—is under growing pressure to spend billions more on a mission even more fraught with peril: helping states create and support high-quality preschools.

With 38 states funding prekindergarten programs last year and more than 1 million children attending them—both all-time highs—congressional leaders in Washington are sponsoring various proposals to make these programs bigger and stronger. In June, Democratic presidential candidate Barack Obama proposed “investing \$10 billion to guarantee access to quality, affordable early-childhood education for every child in America,” and his campaign website features a call for “Early Learning Challenge Grants” to help states “move toward voluntary, universal preschool.” Senator Hillary Clinton’s Ready to Learn Act, cosponsored by Missouri Republican Kit Bond, would provide states with “such funds as may be necessary” to offer full-day voluntary preschool for four-year-olds, with priority given to those who are poor or unfamiliar with English. Hawaii Democratic congresswoman Mazie Hirono’s Pre-K Act would deliver states \$1 billion annually for six years to strengthen existing pre-K programs.

Two powerful forces are driving the push for universal pre-K: the growing percentage of working parents who want help raising their kids and the growing belief that preschool prepares children for school and for life. The clamor for Congress to act may prove irresistible. Unfortunately, the current legislative proposals are misbegotten products of a field struggling to extricate itself from decades of pedagogical superstition and, as such, will almost certainly benefit providers more than the children they aim to serve. Middle- and upper-class kids might fare as well (or better) staying home. Congress would do more good with less money if it focused its pre-K efforts on disadvantaged children, emphasized pedagogical approaches proven to work (in pre-K and beyond), and held programs accountable for results.

Unlike K–12 education, pre-K and its forerunner, nursery school, arose in the early twentieth century with little help or hindrance from government. Concern about the lagging academic achievement of the poor, however, prompted the Johnson administration to create an eight-week summer session for poor children set to enter elementary school in the fall of 1965. These kids, it was hoped, would benefit from an educational “head start.” One of the most enduring of Johnson’s Great Society programs, Head Start has grown into a \$7 billion per year entitlement that (with its offshoots, Even Start and Early Head Start) gives grants to public, private, and nonprofit agencies to provide nutrition, health, and education services year-round for poor children up to five years old and their families as well. Head Start centers today employ a staff of 220,000 and enroll roughly 1 million children, with many more on waiting lists.

The states, for their part, have moved into preschool primarily via the public schools. Some states, like Georgia and Oklahoma, now offer pre-K to all children. Others, like Texas, target assistance to low-income families. Total investment in pre-K by the states grew from \$970 million in 1992 to \$3.72 billion, or about \$3,642 per child enrolled, in 2007.

The strongest case against spending even more public money on preschool is the disappointing return on such investments so far. Well-designed evaluations of Head Start and state-run programs have found that children attending them show only modest gains in academic or social skills—and none that endure for long—compared with peers who stay home or go to child care. A large-scale study of Head Start by the Department of Health and Human Services compared the progress of about 5,000 three- and four-year-olds, all from poor families, some enrolled and some not enrolled in the program. Children in Head Start did no better than the control group on assessments of the skills that best predict academic success, including oral comprehension, vocabulary, and math. Both groups remained on average far below national norms in every important measure of cognitive ability. The most rigorous studies of state programs likewise have yet to demonstrate that the academic gains from pre-K show up later in the form of improved scores on states' early elementary school reading tests, typically given in third or fourth grade.

This persistent failure deserves some sympathy. In their 1995 book, *Meaningful Differences in the Everyday Experience of Young American Children*, researchers Betty Hart and Todd Risley quantified a language deficit in young children from welfare families so vast that it's hard to conceive how even the best preschool might erase it. By age three, the authors found, children from families headed by parents who were professionals had heard, on average, over 8 million more words than children from welfare families. The kids themselves had spoken over 4 million more words than the welfare children. The oral vocabularies of the professional-family kids exceeded those not just of the children but of the *parents* of the welfare families. This astonishing language gap has grim consequences: follow-up studies showed that it correlates closely with large deficits in vocabulary and reading ability at age nine—which, in turn, correlate with large deficits in the reading ability, and consequent prosperity, of adults.

We should temper our compassion for the overwhelmed Head Start and pre-K teachers, however, by recognizing that they have not only failed to close the education gap but have done much over the years to widen it. Like those who practiced medicine 200 years ago, most early-childhood educators demonstrate little regard for scientific findings and base their classroom efforts on theories and personal preferences that empirical evidence has repeatedly contradicted.

Central to the typical early-childhood educator's worldview are three ideas: that it's better for young children to learn through play than through work; that children learn best and are happiest when they can help direct the pace and content of their own learning; and that a child's mental abilities develop at a natural pace that adults cannot do much to accelerate. If a child fails to learn something, it's not because the teaching is faulty, in this view; it's because the child is either "learning disabled" or not yet "developmentally ready" to learn it—a notion derived from the theories of Swiss psychologist Jean Piaget, who believed that mental abilities developed in age-determined phases.

From these premises flow a host of others. Pre-K teachers learn that it's not "developmentally appropriate practice" to seat children at desks; to give them worksheets; to make them work to master the alphabet, letter sounds, and math; to assess their academic skills (medical, dental, and nutrition assessments are okay); and to group them by skill level for instruction (because all children should receive equal treatment

and because children learn as much from one another as they do from adults). Many things that parents would call common sense are, for the preschool professional, high-risk activities.

No amount of contrary data has been able to dislodge this constellation of beliefs, which afflicts not just pre-K but elementary education as well. The largest experiment ever to compare different approaches to instruction in the early grades, sponsored by the federal government in the 1970s and known as Project Follow Through, tracked more than 75,000 K–3 students. It found that only one of the nine methods examined—the one least in keeping with educators' traditional views—had consistently accelerated the academic achievement of poor children. The least successful approaches all shared the prevailing ideas. And if an approach fails in kindergarten, you can bet that it will fail in pre-K, too.

But Follow Through's results proved too unpopular for the government to act on. Hence the same flawed ideas continue to absorb public funds and drive the training, accreditation standards, and state policies that shape today's Head Start, pre-K programs, and elementary education. One can infer their ongoing failure from the lagging academic performance of children from poor families, nationally and in states like Georgia and Oklahoma, which have funded universal pre-K for years.

The one approach that Follow Through found *had* worked, Direct Instruction, was created by Siegfried Engelmann, who has written more than 100 curricula for reading, spelling, math, science, and other subjects. Engelmann dates DI's inception to an experiment he performed at the University of Illinois at Champaign-Urbana in the summer of 1964. He took two groups of three- to five-year-olds—one white and affluent, one black and poor—and tried to teach them “sophisticated patterns of reasoning. . . . things that Piaget said couldn't be taught before the age of formal operations—around 11 or 12.” These things included concepts like relative direction (A is north of B but south of C) and the behavior of light entering and leaving a mirror. Both groups learned what Piaget said they couldn't at their age. But to Engelmann's consternation, the affluent kids learned faster. He traced the difference to a severe language deficit in the African-American group (the deficit that Hart and Risley later quantified) and resolved to figure out how to overcome it.

Engelmann and two colleagues, Carl Bereiter and Jean Osborn, went on to open a half-day preschool for poor children in Champaign-Urbana that dramatically accelerated learning even in the most verbally deprived four-year-olds. Children who entered the preschool not knowing the meaning of “under,” “over,” or “Stand up!” went into kindergarten reading and doing math at a second-grade level. Engelmann found (and others later confirmed) that the mean IQ for the group jumped from 96 to 121. In effect, the Bereiter-Engelmann preschool proved that efforts to close the achievement gap could begin years earlier than most educators had thought possible. The effects lasted, at a minimum, until second grade—and likely longer, though studies on the longer-term effects weren't performed.

The school also found that kids *enjoyed* learning “hard things” from adults and gained confidence as they gained skills. The key was to design the instruction carefully enough so that it worked even for the disadvantaged child—and to blame (and judiciously revise) the instruction, not the child, when the instruction failed. This approach in turn meant trampling the most sacred myth of the profession: that teachers always know best how to teach their kids, and hence deserve wide latitude in the classroom. Unlike other curricula, Direct Instruction programs tether teachers to a tightly scripted sequence of interactions. Engelmann's field testing found that the scripts were the best way to prevent teacher miscommunications that could confuse the student. The scripting also improves efficiency: DI lessons

consume an hour at most of the preschool day.

Engelmann's results at the University of Illinois were replicated during the 1970s and 80s at nine sites across the country. Yet despite these successes, DI has faced little but scorn, neglect, and incomprehension from the educational establishment. Few education schools teach Direct Instruction techniques, except for special-ed classes, and few preschools or K-12 schools use DI curricula. None of the early DI preschool sites survived the whims of changing leadership, and Engelmann says that he knows of 200 places that improved student achievement after adopting DI, only to relapse after a new principal or superintendent capriciously dropped the program.

One site that has endured is Hampstead Hill Academy, a public charter school (pre-K to grade 8) operated by the Baltimore Curriculum Project, a nonprofit organization specializing in Direct Instruction. Stephanie Brown has taught DI math, reading, and language curricula there for ten years, the last five in all-day, state-funded pre-K. Eighty percent of her students come from poor homes, more than half are African-American or Latino, and one-third are immigrants still learning English. Many arrive not knowing how to hold a pair of scissors, use pronouns, speak in complete sentences, or follow simple directions. By the end of the school year, they have learned to sort objects into classes, identify opposites, recognize logical absurdities, use synonyms and if/then statements, create definitions for objects, read simple sentences, and do simple addition problems.

Brown breaks the rules of her profession. In the first months of school, she teaches her four-year-olds to sit at desks, work independently on exercises with pencil and paper, and concentrate for up to 30 minutes at a stretch (twice each morning) as she delivers the fast-paced DI lessons, one each for language and math. During DI time she breaks the class into three groups, arranged by skill level, to teach them more efficiently. She corrects mistakes quickly, firmly, and consistently.

"We're going to start off with something really hard, but I think you can do it," Brown says, beginning a math lesson that I observed in June. Seven children sit in a semicircle around her. Nine others are at their desks, cutting out, coloring, and ordering pictures of the life stages of a butterfly. Two others get extra practice on a language lesson with Brown's assistant near the door.

"Read this," Brown says, pointing at the "+2" written on the blackboard. "Everyone, get ready." Following the script, she signals with her hand, and seven voices in unison say: "Plus two!" The simultaneity of response, a feature of all DI programs, instantly lets her know whether all her students are learning what she is trying to teach without having to take the time to call on each one individually.

"Very good! *Plus two* means the number that is two more. So, four plus two equals what number? Everyone . . ."

"Six!" they all shout.

The lesson lasts 20 minutes, after which the children return to their clusters of desks and five others take their place for a lesson from "Language for Thinking," another DI curriculum. The transition takes no more than a minute. Each DI lesson reinforces and extends several strands of knowledge and skills that the children have learned in earlier sessions. Today's language lesson includes work on the calendar, verb tenses, absurdities, questioning skills, definitions, opposites, and articulating descriptions.

"Get ready to answer some questions about a pair of scissors," Brown starts. "Can you use a pair of scissors

to cut paper?"

"Yes!"

"Can you use a pair of scissors to cut string?"

"Yes!"

"Can you tear scissors into little pieces?"

(Laughter.) "No!"

"Listen to this story and figure out what's wrong with it. There was a woman. She wanted to wash the dishes, so she got out a broom."

She calls on a little girl who points out the absurdity.

The least advanced group comes up for a lesson in "Language for Learning," the program Engelmann wrote to address the language deficit in poor children. The focus today is on calendar facts, opposites, and similarities.

"Name the 12 months of the year," Brown says.

The group answers correctly in unison.

"The story made us feel sad. Now say the sentence that tells the opposite."

"The story made us feel happy."

"I'm thinking of a broom and a hammer. How are they the same?"

One girl answers: "They both have handles."

"Very good. How are they different?"

A boy says: "A hammer hurts you when it hits you, and a broom doesn't."

Brown does DI lessons in the morning when the children are fresh. The rest of the day is devoted to standard pre-K fare: art, music, free play, gym, story time, and theme-based centers where students get to choose their activities, such as playing with blocks or kitchen utensils. "The children aren't stressed out—they feel like the smartest kids on the planet," Brown says. "Even the ones with behavior problems—it settles them."

Direct Instruction rests on key findings in educational research. Children, particularly from poor homes, need lots of oral practice to master language and reading, studies have shown—hence the high number of responses-evoked-per-minute built in to DI curricula. Research has also confirmed that it's possible to teach three-year-olds to hear and manipulate the individual sounds, known as phonemes, that make up words. Further, by three, most can learn to distinguish words that rhyme, and by four, they can understand the concept "letter" (that marks on a page correspond to specific sounds), learn the alphabet, and hear alliterations and syllables. Most middle-class children acquire these essential "pre-reading" skills

—known collectively as phonological awareness—in the normal course of their upbringing. Most children in poverty and children with hearing deficits must be taught them explicitly, as DI does.

But the most significant—and least appreciated—research finding that justifies DI’s intensive, prescriptive approach remains Hart and Risley’s data on the language gap. “Time is the great enemy of the at-risk child,” Engelmann says. “He must learn more in less time, he is less experienced at learning, and he needs more practice. You can’t reproduce the *form* of the middle-class upbringing; you’ve got to try to reproduce the function. That means teaching kids the *fast way*.”

The great stone in the road to a better preschool, in fact, is the dominance of pedagogical programs that *don’t* show teachers how to teach oral language and phonological awareness the fast way. The most popular, Creative Curriculum, controls about half the Head Start market. Another big seller is High/Scope. Absent major changes in how curricula get developed and approved for use in schools, these giants are about as likely to lose significant sales to the likes of DI as Budweiser is to get beaten by a microbrewery. So far, none of the 38 states funding pre-K has interfered with local decisions about curricula by, say, posting a list of programs that have passed rigorous field tests (or even by requiring such tests)—let alone by requiring districts that take state money to use them. Likewise, none of the studies of state pre-K programs has even compared the effects of competing curricula on student outcomes.

The other hole in the nation’s pre-K system is assessment, still a dirty word in most pre-K circles. Congress eliminated the Head Start National Reporting System, a series of cognitive tests given twice a year to Head Start children, after critics argued speciously that the tests ignored socio-emotional development and that the questions weren’t age-appropriate. Of the \$3.72 billion spent by states last year on pre-K, almost nothing went to assessing children’s cognitive functioning or monitoring their progress against established norms. Without such data, states cannot set meaningful performance standards, much less hold districts accountable for meeting them.

Indeed, the nonprofit National Institute for Early Education Research doesn’t even include assessment in its ten-item Quality Standards Checklist, a popular tool for judging state pre-K programs. This is like appraising a painting with your eyes closed. The better curricula, DI included, build checkups in to their programs—another reason many educators don’t like them.

If the early-childhood education industry has persuaded states not to assess preschool children, monitor their progress, prescribe rigorously field-tested curricula, and evaluate the impact of individual preschools on student achievement—and if the state agencies don’t know how to do these things any better than the pre-K field from which their leadership is largely drawn—what can we expect the states to do to make early-childhood education more educational? Not much at this stage.

None of the bills in Congress is likely to increase rigor. Hirono’s Pre-K Act and Clinton and Bond’s Ready to Learn Act would support state plans that require “culturally and linguistically appropriate” curricula that meet the child’s “developmental needs” and are taught by teachers with degrees in early-childhood education or related fields. Either proposal would thus probably wind up spending a fortune perpetuating the fanciful doctrines that still dominate early-childhood education programs: the root of the weed.

The good news is that there are data-driven educators scattered in schools across the country, and even within a few state education agencies, who would be natural allies in a crusade for better pre-K. Alabama, Washington State, Arizona, and the federal Bureau of Indian Education have all built strong leadership in

Reading First, the federal program targeted at poor children in K–3 that requires teachers to use research-backed practices. Officials there could gradually extend the use of effective curricula to pre-K. Another way to find allies is to ask vendors of the better curricula for sites that are doing well with their products. Bremerton School District in Washington State and Versa Reece Academy, a public school in Houston, both operate rigorous, data-driven preschool programs for poor children. But such areas remain in the minority.

If the philanthropists now investing in pre-K (more than \$1 billion per year, by some estimates) want to try something radical, they might start a preschool modeled on Paul Weisberg's now-defunct Early Childhood Day Care Center for at-risk kids in Tuscaloosa, Alabama. Using teachers who didn't even have a college education, Weisberg ran a DI preschool that produced impressive student achievement gains in reading and language for a decade, vividly demonstrating that what pre-K providers need most is good training in good curricula, not (as governments are now hearing) degrees in early-childhood education.

Even teachers with fallacious assumptions want to succeed and are generally eager to learn new ways to help their kids. Wise policymakers can promote the ways that work, and wise parents can insist that teachers use them. We cherish our myths about childhood. We must cherish our children even more.

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