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## It Should Not Be Left to Chance: Ensuring a Good Education For All Our Children

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**IT SHOULD NOT BE LEFT TO CHANCE:  
ENSURING A GOOD EDUCATION FOR ALL OUR CHILDREN**

ellen condliffe lagemann

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**would like to make a rather bold claim. I would like to suggest that progressive education is really equivalent to good education.** For a variety of reasons, progressive education has long been tarnished with a label that trivializes the significance of its methods. That aside for the moment, recognizing that progressive education is good education is important, because we must provide a good education for *all* children if we are to accomplish our stated goal of educating *all* children to high levels. This, then, is the question I would like to pose: What do we need to do to ensure that good education becomes more universally available than it is today? The answer lies, I think, in developing a new science of education, one that better integrates research, practice, and policy, and does a better job of educating the public about education.

What progressive education is all about can be readily observed in classrooms staffed by Bank Street graduates. The activities in such classrooms involve age-appropriate tasks that children take seriously because they are “real” and matter to them. They are what John Dewey called “occupations.” They often have tangible outcomes, such as applesauce or cookies that result from measuring and mixing different ingredients. They are often sustained over time, as in the case of a block construction that begins as a building and ends as a city. They embody the belief that education is neither merely instrumental nor primarily instrumental to some other end. Rather, education is an end in itself.

A second tenet of progressive education has to do with placing matters related to culture and cultural differences at the center of teaching and learning. Classrooms in which diversity is acknowledged and celebrated exemplify this. So do activities that enable children to live as other people through their imaginations. If they are organized, not as rote instruction, but rather as explorations, then social studies, literature, art, and science often provide the grist for such experiences. These areas of the curriculum tend to be central in the classrooms of Bank Street graduates.

Finally, there is the matter of the social side of progressive education. From John Dewey to Deborah Meier, progressive educators have argued that education is a process of social interaction that occurs between and among people. It is important for children to be able to work on their own, but it is also vital that they be

able to work with and learn from others. When children learn to be responsible for one another, when they learn to listen, when they learn to respect other people and their rights, they are learning how to be community members. Classrooms in which children depend upon one another are places that teach children to value the interconnections that foster community. Community depends on communication. Classrooms that offer rich opportunities for self-expression and for learning to appreciate the writings or paintings or songs of other people promote the development of communicative skills. Bank Street classrooms are more likely to be ordered by well-communicated goals and purposes than by sets of rigid rules and regulations. They are lively and busy but not disorderly. They encourage interaction between and among children who are trying to accomplish important tasks. They are classrooms in which teachers remember that they are teaching children, not merely the subjects included in the curriculum.

If one really understands progressive education, I believe that it becomes virtually synonymous with “good” education. Progressive education is designed to help each child acquire the knowledge and skills necessary to learn how to learn so that they can continue to acquire knowledge throughout their lives. In my view, that is what good education is all about. Unfortunately, progressive education is not always seen so broadly or so positively. For example, Many nonprogressives or anti-progressives, for example, see it as the cause of cultural decline. Some critics see it as diluting academic standards in education. I believe that understanding progressive education in these ways derives from associating progressive education with outrageous educational practices that have been claimed by their inventors as “progressive.” This view fails to recognize that the goal of progressive education is to provide a good education for all children—a goal which, admittedly, has not yet been achieved.

Like William Heard Kilpatrick, the Teachers College professor who invented and popularized the “project method of instruction” early in the twentieth century, many educators have engaged in undisciplined and excessively child-centered practices. In the process, they have created the impression that progressivism involves nonrigorous, romantic approaches to teaching and learning. Beyond that, despite the longstanding involvement of progressive institutions like Bank Street

in the reform of public schools, progressive education has most often been associated with small, private elementary schools. While this is something of a misperception, it is true that progressive education has had a difficult time taking root in public schools, especially at the secondary level. That is because progressive education—for which read “good education”—requires all sorts of things that have not been universally available to children in the public schools.

Today, the small schools movement, in which Bank Street has played an important role through its sponsorship of the Chicago Small Schools Study, carries the promise of establishing progressive educational practices more widely than in the past. The average size of a school in the United States is 741 students, though schools enrolling as many as 1,000 children at the elementary level and 3,000 at the high-school level are not uncommon. By contrast, small schools tend to enroll 200 to 400 children. Regardless of exact size, small schools, as the Bank Street Small Schools Study puts it, are places “where students are well known and can be pushed and encouraged by adults who care for them and about them.”<sup>1</sup> People who have worked in and studied small schools are convinced that children who attend them are less likely to get lost, violence is minimized, better relationships develop between home and school, and student achievement is boosted. Small schools are not a panacea for our educational problems, but they do offer a chance to extend progressive practices to more classrooms.

Although small schools are being established all over the country, there are forces afoot that may undermine the potential small schools offer. One of these forces is the high-stakes testing movement. Given the current caliber of most state assessments and the limitation of opportunities to learn, high-stakes testing promises to narrow the curriculum, restrict the freedom of teachers, and force more students—especially African-American and Hispanic students—out of school. Impatient with the seeming intractability of educational failure for too many students, policy makers in many states and in the federal government have turned to end-of-the-year testing to determine whether children have met state-mandated performance standards. Based on these scores, students are promoted or held back, schools are closed or rewarded, and teacher performance is assessed. Ensuring that *all* children really do learn to high standards is an appropriate and even necessary

concern among policy makers, but turning to high-stakes testing as the sole determining mechanism places proponents of accountability on the side of central control of curriculum and instruction. That is unfortunate because central control is likely to undermine the conditions that enable many small schools to ensure that the learning needs of all students are understood and addressed. I do not believe that this is the intention of advocates of high-stakes testing; rather, it is an unanticipated outcome of policies that have run amuck.

Given this unfortunate situation, we need to do more than continue to create small schools if we seriously want to offer a good education to all children. As I suggested at the start, I think we need to develop a new science of education, a better integration of research, policy, and practice, and more systematic and sustained efforts to inform the public about education and what we know about how to improve it.

## **A NEW SCIENCE OF EDUCATION**

To improve education to the point where we can say it is realistic to aspire to educate *all* children to high levels, we will first need to change the science of the field. Although many people were important in creating the templates of educational research, none was more significant than Edward L. Thorndike. Born in 1874, Thorndike graduated from Wesleyan and received a doctorate in psychology from Columbia University, where he studied with James McKeen Cattell, one of the early inventors of what were then called “mental tests.” After one unhappy year of teaching at the College for Women at Western Reserve University, he joined the Teachers College faculty in 1899. He remained at Teachers College for the next forty-eight years.

Thorndike was a behaviorist who believed that learning consisted of making connections between stimuli and responses. One’s capacity to learn, according to Thorndike, was largely based on inherited mental traits and characteristics. “What anyone becomes by education,” Thorndike maintained, “depends on what he is by nature.”<sup>2</sup> Psychology could be of use to educators, he believed, if it identified individual mental traits and showed how these changed in response to various stimuli. Having spent time visiting schools during his first year at Teachers College,

Thorndike concluded that school observations were a “bore” and took time away from the controlled tests that would, in the end, provide the framework for a science of education.<sup>3</sup>

Although Thorndike helped the professional careers of a number of his female students, he believed that men were generally more intelligent than women and were better suited to the most challenging and responsible occupations. This belief colored his view of social relations within education. Ambitious and determined to build a science of education that could “tell the effect of every possible stimulus and the cause of every possible response in every possible human being,” Thorndike believed that male scholars, especially educational psychologists, should generate the knowledge needed to shape the nation’s schools.<sup>4</sup> In turn, armed with this knowledge, male school administrators should decide “what the schools shall try to achieve and . . . arrange plans for school work which will attain the desired ends.” Not only that, as he explained in *The Principles of Teaching Based on Psychology*, “having decided what changes are to be made,” school administrators should then “entrust to the teachers the work of making them. The special problem of the teacher is to make these changes as economically and as surely as is possible under the conditions of school life.”<sup>5</sup>

When Thorndike arrived at Teachers College, TC was what its dean, James Earl Russell, described as “a private normal school with sixty-nine regular students of junior-college grade . . . [and] an annual deficit in current expenses of \$80,000.”<sup>6</sup> Long before Russell retired, it had become a graduate school affiliated with Columbia University that served thousands of students from all over the world. As TC became known as a setting for scientific research in education, its stature rose. In part responsible for this reputation, Thorndike also benefited from it. His courses and textbooks were required of all TC students, of whom there were 3,000 by 1913. His students moved on to positions in schools and colleges across the country, where they, in turn, transmitted the narrow behaviorist view of learning they had acquired from him. Having announced to his wife many years earlier that he was intent upon “conquering the new world of pedagogy,” Thorndike could justly say he had succeeded by the time he retired in 1947.<sup>7</sup> As Leonard Ayres, a fellow educational researcher commented, Thorndike deserved to be recognized as the



“father of scientific measurement.”<sup>8</sup>

Needless to say, there were many other early scholars of education whose work extended and supported Thorndike’s. Surprisingly, however, there were relatively few who challenged him. One could argue that Bank Street mounted at least an implicit challenge, especially under the influence of Barbara Biber, as the College gave up its initial emphasis on simple but comprehensive measurements of all the aspects of child growth in favor of more varied and naturalistic techniques of child study.<sup>9</sup> However that may be, the dissenters were few and far between. Although John Dewey’s views were totally at odds with Thorndike’s, to my knowledge, Dewey never commented on Thorndike’s work or pointed out the degree to which Thorndike’s influence was steering education away from the values Dewey cherished. By contrast, Thorndike claimed that he just could not understand Dewey, even suggesting that Dewey’s work in education had been primitive. “What physical science has to do in comparison with the cosmologies of the early philosophers,” Thorndike announced in 1911, “the science of education has to do in comparison with the first generalizations of Herbart, Spencer, or Dewey.”<sup>10</sup>

A full sixty years after his retirement, Thorndike may seem like a relic from ancient history. But his influence is woefully alive in the present and needs to be replaced with more progressive beliefs and practices. Focusing on assessment, which is critical to the improvement of education, Lorrie Shepard made this point in her presidential address to the American Educational Research Association in the spring of 2000. Shepard pointed out that Thorndike had established a paradigm built around a theory of curriculum that assumed that all learning outcomes could be parsed into small, incremental steps that could be discretely taught. He combined this with a hereditarian conception of I.Q. Then he linked these views to his insistence upon the centrality of scientific measurement. The result, according to Shepard, was the assumption that tests should be given often because they were a full and accurate gauge of learning. Tests were also presumed to be important to motivation, the belief having been that rewards would encourage learning. That is, passing or receiving high grades would encourage learning; failing would serve as a punishment and, thus, spur new effort. We now know that these assumptions were wrong. Advances in cognitive science and learning theory have demonstrated that

learning and motivation are multifaceted and so, too, must be measurements of learning.<sup>11</sup>

In light of all this testing, it is clear that developing a new approach to learning, curriculum, and assessment is essential to progress in education. As Shepard points out, even creating assessments that “can be used as a part of instruction to support and enhance learning” will be challenging.<sup>12</sup> Three obstacles loom large. First, most writings about testing are based on assumptions congruent with the old Thorndikean paradigm. Hence, much long-accepted knowledge about teaching and testing will need to be set aside. Beyond that, teacher educators will need to be reeducated about curriculum and teaching methods so that they, in turn, can make new assessment practices central to their work with students. Finally, the public will need to be educated to the dangers of high-stakes testing that is intended for “accountability” but not designed to enhance classroom instruction.

A number of researchers have studied what some tout as the “Texas Miracle” brought on by high-stakes testing. Walt Haney, a testing expert at Boston College, was an expert witness for the Mexican American Legal Defense and Education Fund in an unsuccessful lawsuit brought against the State of Texas. The suit attempted to prove that the Texas Assessment of Academic Skills (TAAS) discriminated against African-American and Hispanic students. In studies conducted over two years, Haney found that rising TAAS scores were more a result of familiarity with the test than of real gains in knowledge. He also discovered that claims that score gaps between Whites and African-American and Hispanic students were lessening were false. Instead, Haney maintained, African-American and Hispanic students had been increasingly held back in grade nine, before the TAAS exit tests started. This made the scores in tenth, eleventh, and twelfth grades look better. Haney’s study is the most thorough of all that I have read, but I need not belabor the details. Suffice it to say, claims that high-stakes testing is improving educational outcomes in Texas appear to be vastly overstated, perhaps even distorted.<sup>13</sup>

Haney, Linda McNeil from Rice University, and others have also marshalled evidence that high-stakes testing is impoverishing the lives of both students and teachers in Texas classrooms. Not having alternative means to ensure that their students will be able to demonstrate the skills and mastery the tests require, teach-

ers are coaching students for the test and discarding material that will not be featured. McNeil reported that in an eighth grade English class, students were copying rules for the use of semicolons in order to memorize them for a test. As the teacher wrote the rules on the blackboard, he explained that the students needed to spend all their time on grammar until the test, but that after the test they would be able to read Shakespeare, which would be much more interesting.<sup>14</sup> A survey Haney conducted found that only twenty-nine percent of the teachers interviewed believed that “mandated testing contributes to the realization of the goals of the current educational reform movement.” The same survey also found that only twenty-two percent believed that “mandated testing influences teachers to spend more instructional time with small groups of students working together (using cooperative learning).”<sup>15</sup>

High-stakes accountability testing derives from a science of education that is congruent with Thorndike’s conception of learning and from his view of a hierarchical social relationship in which teachers are merely transmitters of curriculum developed by others. Classroom assessments that can support and enhance learning must be a central part of a new science of education that is based on constructivist pedagogies and collaborative relationships among teachers, administrators, and researchers.

A new science of education must seek better descriptions of precisely what it is that happens in classrooms like those at Bank Street. Once described, those methods must be systematically implemented and evaluated in varied settings to see how effective they are when shaped by a wide range of cultural and contextual variables. Beyond that, studies must be mounted to learn how instructional practices and assessments can address differences in out-of-school background that too often work against poor children from nonstandard English-speaking backgrounds.

A new science of education should not forego descriptive work, such as case studies and ethnographies. It must be enriched by careful, nuanced examinations of the historical and social contexts in which teachers, students, parents, and others engage in education. And it must be informed by philosophical explications of the meanings and consequences of different ideas, values, and practices. The key to

a new science of education lies in a commitment to the principles of “good” science, on the one hand, and to the provision of an effective education for all children, on the other. Moving toward such a science will not be easy, since the old science is so well entrenched. Politicians often want “miracles” and are understandably annoyed by the difficulties involved in delivering on promises made about improving education. So be it. Things that are worth doing are usually difficult, and developing a new science of education is, I believe, a necessary step toward strengthening progressive education—good education—in the United States.

### **THE INTEGRATION OF RESEARCH, POLICY, AND PRACTICE**

A new science of education is necessary, but not sufficient, to promote effective school reform; it must be accompanied by changes in the institutional ecology of educational research. If one looks historically at the emergence of new fields of science or new paradigms within existing fields, one finds that when new knowledge flourished, the structures for knowledge creation usually changed along with the science. The teaching hospital emerged with the development of modern laboratory-based medicine. Centers for survey research, such as the National Opinion Research Center at the University of Chicago, grew as techniques for conducting survey research became more sophisticated after World War II. If we are going to have a new science of education in the United States, we need to find new ways to organize relationships among researchers, practitioners, and policy makers.

Until very recently, it was generally assumed, in education and other health and human services, that relationships among research, policy, and practice should be hierarchical and sequential. Research or theory came first, and the fruits of research were then to be applied in policies that would ensure the translation of research into practice. Needless to say, things do not work that way. The model was too neat, linear, and detached from politics to make sense as a model for actual human invention. Nevertheless, belief in sharp differences between research and practice or between so-called basic and applied research has a long history in American academic life. With the exception of writings by a few notable progressive educators like John Dewey and Lucy Sprague Mitchell, I can think of no major study or report that called for a different model. Abraham Flexner’s famed

report, *Medical Education in the United States* (1910), recommended a paradigm for medical education in which laboratory studies preceded clinical work, and that report was embraced by many other professions. Vannevar Bush's *Science, An Endless Frontier* (1945), which provided a model for post-World War II science policy, was built around a sharp distinction between basic and applied work.

Given the prevalence of theory-to-policy-to-practice models for knowledge invention and application, the attention being directed toward a book by Donald Stokes, *Pasteur's Quadrant: Basic Science and Technological Innovation*, is noteworthy. *Pasteur's Quadrant* was featured in no less than five reports published in 1999 on ways to improve education and educational research; since then, the book has become even more widely cited.<sup>16</sup> Stokes's study argues for a model of research that is a hybrid between what has been conceived as pure basic research, on the one hand, and purely applied research and development, on the other. Calling his model "use-inspired basic research," Stokes makes a compelling case that such research can both enlighten, thereby advancing basic knowledge and understanding, and support interventions, thereby being useful to the people engaged in the activities studied.<sup>17</sup> His model should not lead us to reject basic science, but it does offer new opportunities.

Within education, use-inspired basic research has a high potential for resolving the longstanding problem of linking theory and practice. If studies designed to be useful to people in the field are informed by pressing theoretical questions, they have a chance of both improving practice and creating new knowledge that can inspire further research and improvement. Researchers and practitioners often begin from different perspectives. Researchers usually bring questions derived from general problems or different sites to their work in a school setting. Practitioners, by contrast, tend to have questions that are more school- or even classroom-specific. The challenge for use-inspired research is to find ways to acknowledge and respect these different perspectives in order to co-construct investigations that can be sensitive and helpful to both partners.

Too often in education, researchers have gone to the field only to gather data. Too rarely have they felt called upon to find ways to feed their analyses back to the field in useful ways. Too often, technical assistance has been provided to teachers and others with little thought to systematic appraisal of what providing

that assistance has demonstrated about intervening in practice. Unless relationships can be established that ensure that researchers and practitioners will be mutually enhanced by the activities they engage in, there is little chance that a new science of education will enhance what can be accomplished in classrooms.

Use-inspired research may also help to erode the disdain that many policy makers express toward educational research. Policy makers need answers. They are usually held accountable for improved outcomes. They believe that, as yet, educational research has not fostered improved outcomes for children. They are rightly frustrated with that state of things. Use-inspired research could help to change that picture.

There are some notable examples of use-inspired research already operating in the field. One is the Chicago Consortium for School Research. This group, headquartered at the University of Chicago, has been monitoring progress toward improved learning in Chicago's public schools. Their reports have not always been greeted with glee by the Chicago school authorities, but there is no question that they have helped keep reform efforts on track and contributed a great deal to our understanding of school change. The Consortium has monitored attendance, promotion from grade to grade, the success of summer school, and much more. At times, the data generated by the Consortium have conflicted with the picture (usually of progress) that city leaders wish to project. This has helped to maintain a press for school reform.

Design experiments, such as the Communities of Learners Project organized by the late Ann L. Brown and Joseph Campione in Oakland, California, are another example. Brown and Campione had a number of theoretical principles about ways children learn that they wanted to test in a real-world setting. For example, their theoretical work had convinced them that what they called "reciprocal teaching," in which all students have responsibility for teaching some part of a lesson, would be more powerful than traditional models. Working closely with teachers and principals, they built these principles into the ways they organized instruction in a number of classrooms. The results in terms of gains on traditional tests were impressive, and so were the more subtle and important gains, like reading when one is out of school.

Finally, there is the Center for Policy Research in Education (CPRE), which is an example of a new way to link research to policy. Bringing together researchers from the University of Pennsylvania, the University of Southern California, Harvard University, Michigan State University, Stanford University, and the University of Wisconsin at Madison, CPRE has worked to develop styles of research that policy makers find interesting, useful, and credible. Generally, these are big-picture perspectives that one can grasp in half an hour at a policy breakfast. CPRE was convinced that policy makers had pictures in their heads about what is sensible in education. The only question was whether these pictures were research-based. They set out to increase the likelihood that they would be grounded in the best knowledge available. To ensure that would happen, they made the dissemination of knowledge a continuous part of their activities. In addition, topics of research were defined according to the interests of state policy makers. Relationships between spending and achievement, the merits of different instructional interventions, and the pros and cons of different kinds of professional development have been central to their work.

For use-inspired research to become commonplace, there will need to be significant changes in the professional preparation of researchers, teachers, and principals. Some researchers today feel comfortable working in classrooms and district offices. Many more are inclined to remain in university libraries and studies. Researchers must find ways to reverse this situation. It is difficult enough to get one's variables well organized when one is doing a secondary analysis of literature. It is prodigiously more difficult amidst the confusion of large urban high schools. And it is more difficult still when one is trying to define one's research in collaboration with the people one is studying. However difficult, this is what people preparing for careers in education research must master. In turn, teachers and school administrators must be introduced to research earlier, more frequently, and in a more focused way. They need to feel sufficiently comfortable with research methods in order to be critical consumers of research. More than that, they need to be socialized in ways that make not only reflection, but the actual conduct of experiments part of their daily practice. Helping would-be researchers, teachers, and administrators acquire these skills and orientations will also require working

with the people who are training and mentoring them to ensure that they themselves are knowledgeable about new approaches to theory and practice.

## INFORMING PUBLIC OPINION

If developing a new science of education is necessary, but not sufficient, for enabling progressive educational practices to thrive, the same is true of designing and developing more integrated approaches to research, policy, and practice. Even if we can accomplish both of these herculean tasks, one thing strikes me as terribly complicated and very important—changing public attitudes about education.

Consider as an example the economics of education. Progressive education is often dismissed because it is too expensive. It involves low student-teacher ratios. It requires time for staff planning and development. It necessitates developing different study plans for students who learn differently. All this costs money. According to a study recently conducted by three policy analysts at New York University, however, small schools are more efficient than large schools if one calculates the costs across the larger number of students completing school.<sup>18</sup> The public needs to hear that.

The matter of whether money counts in education and how and when it counts has been very controversial in educational research. At least since James Coleman's massive study *Equality of Educational Opportunity* appeared in 1966, there has been strong evidence that factors related to family background have a more powerful effect on student achievement outcomes than educational inputs like more money. This has been depressing news for educators because it has lessened our power to intervene to help poor children. Now, however, there is new work that is effectively challenging this bleak picture. A team of researchers at the University of Michigan has been conducting a large study of a number of whole-school reform programs to determine whether or not they work. In the process, these researchers have discovered that increasing resources alone does not accomplish much. Increasing resources is an effective strategy for improving education when combined with, among other things, strong curriculum and effective professional development. The bottom line is that it is the interaction among a variety of so-called inputs that determines how widely and well children will learn.<sup>19</sup> Find-



ings like these must be translated into forms that can help parents and taxpayers understand the complexity of education. Findings like these could help to counter simplistic criticisms that claim that we are spending so much and getting so little.

Educating the public will also require finding ways to address the centuries-old status discount under which educators have operated. As I have argued in *An Elusive Science: The Troubling History of Education*, I am convinced that matters of low status have had a pernicious effect not only on the educational profession (teachers), but also on educational research.<sup>20</sup> Scorned by their colleagues in the arts and sciences, scholars of education have often been isolated from new developments in the social and behavioral sciences that could have significantly advanced their work. In addition, having suffered the sting of insults about their own competence and qualifications, many researchers have been eager to assert their superiority over administrators and teachers. The result has been barriers to the kind of collegiality and easy communication that are essential to strong research and its effective application. Somehow, the teacher bashing and the laments about ignorant educators have to be countered with deliberate efforts to refocus public attention on the importance of what teachers do and the need to harness the knowledge we have to assist them.

Finally, I think parents and taxpayers must be pushed to see education as one of several necessary child development services in which the public has a very large stake. Education defined as schooling cannot be effective unless it is preceded by opportunities to learn at home and in preschool. Schooling also depends on having nutrition and health care services available to all children. In addition, it requires that children have access to after-school programs, not only during their early years, but all the way through high school. It demands, finally, that media violence and neighborhood crime, which may encourage school violence, be curbed. The National Research Council has recently issued two reports—*From Neurons to Neighborhoods: The Science of Early Childhood Education* and *Eager to Learn: Educating Our Preschoolers*—that provide compelling evidence for the value of integrated services for children.<sup>21</sup> Reports like these should not remain on the shelves of academic libraries. Their recommendations need to be topics for public debate.

I do not think we really know how to provoke such debate. The Internet has

offered exciting new opportunities for communication, but it cannot substitute for face-to-face conversation about vital public problems. What could mobilize such conversations? This is not a new question, but it is one to which we urgently need answers.

Let me give you one last example to underscore the importance of finding ways to stimulate public discussion about education. As we know, learning to read during the early grades is the single best predictor of academic success. I have heard from reliable sources that California plans how many new jail cells it will build according to the failure rates on reading exams of children finishing third grade. The assumption is that most children who cannot read at the end of third grade will eventually drop out of school and likely become involved in crime.

Regardless of California's planning assumptions, there is no doubt that learning to read by the end of third grade is vital. Reading is an area of educational research in which there has been significant progress in the last decade or two. In consequence, a great deal is now known about how early learning develops and what can be done to help children read.<sup>22</sup> Admittedly, much of that knowledge has been developed at a remove from the "real" world of classrooms and has not yet been tested and refined. It would be an exaggeration to say that, today, we have the capacity to ensure that *all* children learn to read by third grade. However, if the public understood how close we are to having that capacity, I wonder if it would tolerate the current level of school failure.

I am not suggesting that knowledge can or should trump politics in education. Education is ultimately about how we view the good life and what we want for our society. People will inevitably disagree about such matters. That notwithstanding, I believe that if the public at large were better educated about education, ideologues bent on pushing a particular issue would encounter wider insistence on evidence for their claims. Had that been the case, the history of remedial education at the City University of New York or of bilingual education in California might have been different.

Whether more widely diffused knowledge about education would, in fact, have forced reformers and politicians to be more data conscious, it is important to recognize that we lack sufficient numbers of schools that can help to extend knowl-

edge through its refinement in practice. If we were able to invent the manufacturing and supply systems that enabled the United States and its allies to win World War II, surely we should be able to invent schools that can deliver literacy to every American child. The problem is that most people do not understand that to do that, schools must be organized in ways that will enable teachers to gain, use, test, and refine new knowledge. We must educate the public about what we do and do not know about education.

Observing classrooms where learning is taking place is exciting; observing classrooms where learning is not taking place is depressing. Too often, the difference between such classrooms has been left to chance and coincidence. If children are lucky, they have good teachers who are working in schools that support them with materials, collegueship, and development opportunities. If they are lucky, children also have healthy, safe, supportive, and stimulating situations outside of school. Lucky children often acquire skills and knowledge even if those skills and knowledge are not explicitly taught. Children who are less fortunate fall behind.

What I have been arguing is that this situation is intolerable. The fate of children should no longer be left to luck. The chances for growing up healthy and well educated should be assured to all children through research that is effectively integrated with policy and practice. Last, but not least, the chances for growing up healthy and well educated should be demanded by an informed public that can intelligently insist on educational success.

Let me close with one last point. There is a deep belief in this country that we should not experiment with children. There is a sense in which that belief is right, and yet, we experiment with children every day in virtually every classroom in this country. We do that unknowingly. We do it because most practices in education are untested. Curricula, tests, technologies, whole-school reform programs, and a slew of other things are adopted by individual teachers or by school districts because those seem promising. But, more often than not, no one has systematically submitted the curricula, tests, technologies, and reform programs to careful, scientific testing. Of course, there must be room in education for spontaneity and serendipity; put otherwise, for art as well as science. As the philosopher Nel Noddings has so cogently reminded us, there must also be room for caring.<sup>23</sup>

Taking these points as given, it is clear that we need more planned experimentation in education, if children's educational future is not to be left to fate.

Bank Street has always been committed to planned experimentation with children. I hope that the values and practices that have long characterized this institution can now be subjected to even more rigorous and critical examination and can, at the same time, be adopted elsewhere. I hope, too, that institutions like Bank Street will redouble their efforts to help develop small schools, where research and practice can be integrated, and where more children will learn more effectively than they are currently doing in large schools. Finally, I hope institutions like Bank Street will seriously work on the difficult problem of improving public debate about education. Knowledge does not guarantee good policy, but ignorance will surely guarantee the reverse. We live in times that could be said to be hostile to progressive education. But one could argue alternatively that we live at a time when progressive practices could be buttressed more securely by science, thereby gaining credibility and becoming more commonly understood as essential to the education we provide *all* children. I hope that will indeed be the case.

## NOTES

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<sup>3</sup>Thorndike, E. L. (1905, January). The quantitative study of education. *Forum*, 36, 443.

<sup>4</sup> Ibid., p.9.

<sup>5</sup>Ibid.

<sup>7</sup> Quoted in JonÁich, G. (1968). *The sane positivist: A biography of Edward L. Thorndike*, p. 153. Middletown, CT: Wesleyan University Press.

<sup>8</sup>Ayres, L. P. (1918). History and present status of educational measurements. In G. M. Whipple (Ed.), *The measurement of educational products*, p. 9. *Seventeenth Yearbook* (Part 2). Bloomington, IN: Public School Publishing.

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<sup>11</sup>Shepard, L. A. (2000, October). The role of assessment in a learning culture. *Educational Researcher*, 29, 5.

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<sup>13</sup>Haney, W. (2000, August 19). The myth of the Texas miracle in education. *Education Policy Analysis Archives* 8. @ <http://epaa/asu.edu>.

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<sup>15</sup>Ibid., p. 5.

<sup>16</sup>National Academy of Education (March 1999). *Recommendations regarding research priorities: An advisory report to the National Research Policies and Priorities Board*, National Educational Research Policy and Practices Board (April 5, 1999). *Investing in learning: A policy statement on research in education*; National Research Council. (1999). *Improving student learning: A strategic plan for education research and its utilization*. Washington, DC: National Academy Press; National Research Council. (1999). *How people learn: Bridging research and practice*. Washington, DC: National Academy Press; Lagemann, E. C., & Shulman, L. S. (1999). *Next steps: Reflections on education research and ways the National Academy of Education might help to further strengthen it*. New York: National Academy of Education.

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