

GETTING SMART: THE SOCIAL CONSTRUCTION OF INTELLIGENCE

by Jeff Howard

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Our approach to educating children is failing because the attitudes that underlie it are wrong. American beliefs about human intelligence and educability are limiting and counterproductive; they represent a major constraint on the development of our young, and an entirely inappropriate basis for 21st century pedagogy. As the "American Century" draws to a close to the tune of the emerging economic hegemony of Japan, we confront a highly competitive global economic order that demands ever-increasing levels of literacy and problem solving proficiency in workers. In response, we are raising children whose knowledge and skills are inferior to those of their industrial-age parents. The recent heightened attention of politicians and business leaders provides a clue about the seriousness and breadth of the national concern over this issue. The fact that no workable approach to national educational reform has yet surfaced indicates the depth of our muddle. After years of flailing about, looking for scapegoats and making empty demands for change, it is clear that something is interfering with our capacity to mobilize our resources and our know-how to educate children. The obstruction lies at the most fundamental level of our thinking about people and their capabilities: we operate from the self-fulfilling conviction that only a small percentage of children are intelligent enough to become well educated. This belief has a profoundly negative impact on our pedagogy, engenders lack of confidence in children and indifference to data that demonstrates that virtually all of them can learn, and it discourages mobilization of an effective movement for educational reform.

It is not as if we lack models of success—examples abound of school interventions that work. Jaime Escalante has taught calculus to some of the poorest children in Los Angeles. In his thirteen year tenure as Community Superintendent in Brooklyn, Jerome Harris presided over significant improvements in the academic performance of some of the poorest schools in New York (in 1973, 21% of his students were reading at or above grade level; by 1986, 65.2% were). In his first year as Superintendent in Atlanta, Harris achieved similar results in 16 of that city's worst performing schools. Johnson City, New York, a working class community with a high poverty rate, has completely reorganized its education system, with the result that

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the average 8th grader now scores at the 11th grade level in both reading and math on standardized tests. In every city, local papers publish accounts of the wonderful results achieved by inner city teachers who genuinely love, and believe in their students. But these success stories, when they are reported, seem to pass through the public consciousness without leaving an impression. There is little evidence of a movement among math teachers to adopt Escalante's methods, even in Los Angeles. Effective teachers and administrators are often described as 'gifted', their methods considered beyond the capability of 'average' educators. The closest thing to a national thrust for effective education is the movement to toughen academic standards—a movement so far untroubled by notions of basic changes in the way we educate children, or by schemes to finance the necessary reforms. The idea that only a few children are bright enough to learn is a powerful, unquestioned assumption that structures our perceptions and constrains our actions.

The urge to fortify children with knowledge is an instinctive, appropriate response to the perception of a society adrift in a competitive and dangerous world. Our prospects for maintaining our status as a great economic power depend on educating a generation who can solve our problems and restore our competitive edge. Our efficacy as educators, in turn, is bound up in our attitudes about intelligence and learning capacity. Despite the conventional wisdom, most of our children are not congenitally limited in intellectual ability. On the contrary, most are more than intelligent enough to learn, if we learn to teach them. The optimistic idea that "all children can learn" is a basis for marshaling the commitment and investment required to build the education system we need. But optimism is not the dominant feeling now. Fundamental American assumptions about intelligence and education, and a set of policies based on these assumptions, interfere with our capacity to develop children.

I. The Psychological Basis of Underdevelopment

In the late 20th century, intelligence ranks as a critically important personal characteristic structuring not only the treatment children receive in school, but their self-concepts and prospects for productive employment in the information age economy. Picture a young child you know (perhaps one of your own) who is "very bright"; intellectually curious and aggressive, quick to grasp new ideas and concepts, and confident in his or her capacity to learn. Now think of someone, perhaps from the same family, who is obviously "not very smart"; slower on the uptake of new ideas and concepts, inferior in academic skills, beset by low confidence in his or her abilities. Can you imagine these same children in their adult roles, 20 years hence? It is easy to see exciting possibilities for the 'bright' one, perhaps as a doctor, a lawyer, an entrepreneur. The prospects for the second child are far less clear. If this less intelligent soul is one of your own children you may experience considerable anxiety in the contemplation of his or her future, and with good reason. Meaningful employment in the 21st century will require a level of technical competence that is the product of a rigorous educational experience. A child's chances of receiving that kind of education are strongly impacted by our assessment of his or her intelligence, and the child judged less intelligent is not likely to get the chance.

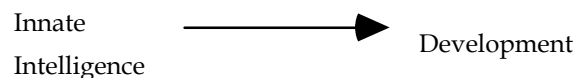
Once adults judge children too dull to be taught complex material, we give up on teaching them what they will need to know. Instead, we send messages that teach them to view themselves as dumb—a self-conception that devastates self-esteem and blocks the capacity to commit to learning. Many children, especially poor and minority children, begin to show a strong aversion to academic work in the primary grades. They seldom read outside of school, and become increasingly alienated from the business of academic work in the classroom. Many have effectively dropped out by the 6th grade, refusing to commit any effort at all to learning, serving out their time until they are old enough to legally walk away from school. The progressive withdrawal of effort from the learning process consigns these children to lives of marginal economic status, and it is a direct response to the way they are treated. Children who are assessed as less intelligent are segregated from those we consider bright. They are systematically subjected to adult expectations that they are incapable of higher learning, especially in math and science, and the self-doubt that naturally results undercuts their willingness to work.

The Innate Ability Paradigm.

The way we treat children is based on powerful assumptions we share about the distribution of intelligence and its relationship to learning capacity. These assumptions generate educational practices that enter the child's experience as critical events, introducing the conditions for failures of confidence and disrupting the motivation to work at learning. They may be summarized:

- There is a distribution of intelligence within what is considered the 'normal' human population; some individuals are highly intelligent (kids would say "very smart"), some are moderately intelligent ("sorta smart") and some are not very bright ("kinda dumb").
- We can specify how much intelligence is needed to learn particular skills and concepts in school, and fulfill particular vocational or professional functions in adult life.
- We can employ standardized tests to measure the intelligence of children, and then predict who will be able to master which skills and assume which functions. Academic placements matching intellectual demands of curricula to the intelligence of individual children are made on the basis of these measurements.
- We can *infer* levels of intelligence in the absence of direct intelligence test data by assessing which material the child seems to be able to master, and which s/he cannot, and by assessing the rate of mastery of new ideas, concepts and operations. Thus, assessments of ability need not be left exclusively to experts and standardized test scores, they may reasonably be made by classroom teachers as well, relying upon their own observations. Inferences drawn in this way operate with the same force as test data in subsequent ability placements.

These beliefs constitute a paradigm—a more or less universally accepted, taken-for-granted theory which organizes perception and behavior. The core idea of this paradigm is the belief that intelligence controls the capacity of an individual to develop intellectually. Intelligence is thought to be an innate endowment, fixed at birth, apportioned to different people in different quantities. The relationship between intelligence and learning capacity may be modeled:



This simple idea has the power to shape what we see when we look at children. The belief that the potential for intellectual development is controlled by an unequally distributed trait, intelligence, focuses our attention on indicators of differences in intellectual ability. The logic of the innate-intelligence paradigm generates, in fact, an exaggerated search for differences—even among very young children. Evidence that one child has a broader knowledge base than most, or that another proves unable to assimilate material that his/her age-mates readily grasp will be taken as evidence that this child is brighter, that one deficient. The standardized tests routinely used on children as young as four years of age are explicitly designed as instruments of differentiation. Test items that are answered correctly by too many children (indicating mastery of what may be important skills or knowledge among a broad segment of the population) are viewed as irrelevant to the task of measuring variation in achievement or ability, and are discarded in favor of items that only some children answer correctly¹. The fact that variations in performance on these tests may simply reflect differences of a few months in the timing of cognitive development (with no more significance than similar differences in the timing of motor development) does little to mitigate their effects in shaping subsequent educational experiences.

The carefully marshaled evidence of variations in present intellectual functioning becomes the prime factor determining our evaluation of children. Anything that *everyone* can do, even such a wonderful feat of intellect as the acquisition of language, is rendered unimportant because it cannot serve our need to compare and classify according to intelligence. The search for evidence that will help us isolate the bright from the dull induces us to ignore evidence of intellectual potential common to all.

Ability Grouping: The Tracking of Future Prospects. Once individual differences in ability have been established, our beliefs about the relationship between innate ability and learning capacity indicate an obvious fix. Children in American schools are routinely sorted into what educators refer to as "ability groupings", which dictate what curricula, at what pace, and with what sort of homogeneous population they will work. Placement

¹ See Jeannie Oakes, ([Keeping Track, How Schools Structure Inequality](#), 1985, Yale University Press) for an excellent discussion of the use of standardized tests to artificially differentiate children. Oakes cites a range of studies that demonstrate the negative impact of ability grouping on students classified as below average, with no evidence of positive impact for students in the upper tracks.

within the hierarchy of ability groupings is a matter of profound importance in the life of a child—different academic tracks lead to very different destinations in American society. Placements may be 'academic' or 'vocational'; one may be considered 'gifted', 'college bound', or not. Those in the 'non-academic' tracks are dispensed a curriculum that does not pretend to prepare them for higher education or the demands of the employment market they will face. Children are well aware of the implications of these placements; they are a primary currency of self-esteem and self-confidence in school, and ultimately of status, productivity and earning power in society.

Ability group placements represent powerful expectancies; when we group kids according to our assessments of their intelligence, we communicate clearly what we think of them, and we shape their conceptions about their places in the world. On a typical elementary school playground, a child asked to give directions to the "dumb room" will point, without hesitation, to a "special education" classroom. Ask the same child (or any other), to point out the 'really smart' kids at his or her grade level, and your attention will be directed to the children in the fast, or 'gifted' academic track. Using inferences based on highly visible ability group placements, and employing categories like "very smart", "sorta smart" and "kinda dumb", most children can accurately rank order the tested intelligence of their classmates. Each child can accurately identify his or her own ranking in this hierarchy, too. They learn to assess their abilities in comparison with their classmates ("what did you get?") and relative to national norms. Research has shown that self-assessments based on scores and ability group placements become permanent features of the child's self-concept, and shape attitudes and behavior toward academic work. Children have confidence in their capacities to learn that are enhanced or diminished by which reading group they are placed in, or how well they did on this year's standardized test. It is rare for a child placed in the lowest math group in the second grade to later become a committed student of higher mathematics, or even be encouraged to take any math beyond rudimentary algebra. Typically, those placed in low ability groups in the primary grades remain on the slow, or "non-academic" track for the rest of their educational careers.

African-American and Latino children in particular are subject to negative expectancies about their intellectual capabilities. Once we accept the idea that intelligence is distributed unequally among individuals, it is a small jump to the conclusion that it may be distributed unequally among different population groups, too. There is a rumor of inferiority that follows minority

children to school, especially racially integrated schools². They enter the school environment under a general expectation that they have less intelligence, are severely over represented in slow, or special education classes and even more severely underrepresented in the upper end of the placement hierarchy, and are subject to a range of forces outside the school, including negative peer pressure, that oppose any commitment to intellectual development.

But the problem is by no means restricted to minorities; a large percentage of girls come to believe early that they are incapable of doing higher mathematics or science; we send a message to a large majority of all of our children, minority and white, that they are *not* among the "gifted and talented." By definition, half of the children tested for intelligence in the United States are rated below average, and most of them know who they are. This knowledge represents a formidable obstacle to learning; the psychological basis of intellectual underdevelopment. Teachers and educational administrators preside over this sorting process, but they are not acting against our wishes. They are the agents of an educational policy based on assumptions we all share. The assumptions are unquestioned, and powerfully self-perpetuating. As today's children learn to accept the designations adults assign them, the idea that some people are smart and others are not is internalized as a natural, a taken-for-granted aspect of "the way things are". Children treated in this way grow up, and can be counted upon to act out these internalized assumptions in their roles as parents and teachers of the next generation.

The Effects of Undermining Confidence.

There is an obvious question that few adults ever ask: are children placed in slow, or low ability subject groupings in the primary grades because they will never be good at those subjects, or do they fail to master particular subjects because of the negative psychological impact of placing them in low ability groups? A strong case can be made that when we undermine children's confidence by communicating low expectations, we set up cognitive and behavioral dynamics that are crippling to the child's later ability to learn.

² Jeff Howard and Ray Hammond, Rumors of Inferiority, The New Republic, September 9, 1985

Expectations Impact Thoughts and Effort. Placing children in average or low ability groupings is a clear signal that they are not regarded as smart. It is a blunt communication of negative expectations from trusted authority figures that diminishes their confidence and leads to self-defeating thought and behavior patterns. When we tell first and second graders that they are not particularly bright in some subject area, most quickly internalize this message, and accept it as fact. A child led to believe, "I'm not very good at math," will tend to think about any difficulties she may encounter in a very damaging way. Once their beliefs in their abilities have been undermined, *children tend to explain their difficulties as caused by deficiencies in innate ability.* "I'm having trouble because I'm not good at this. I will probably never be good at this. I just can't do it." This is only logical; difficulties are taken as confirmation of the deficiencies adults have already diagnosed.

Attributing failure to personal inadequacy has a disabling impact on the capacity to marshal effort. Children who admit to themselves that they are dumb feel a loss of control over future prospects, and find it difficult to rationalize the investment of greater commitment ("If I'm not smart enough to be successful, why bang my head against the wall?"). They often, in fact, experience feelings of depression and shame when they attempt to work, since each attempt at the task represents a confrontation with one's own inadequacy³. This is especially pronounced when these children confront difficult material. For many, avoidance based on the thought, "I can't do this", is the automatic response to anything that doesn't come easily. When we induce children to think and act in this way, we condemn them to long term failure and a permanent sense of inferiority.

This is the mechanism of the self-fulfilling prophecy: negative expectations induce thought patterns that shame children, and program them to give up. This sequence is clearly in evidence in the majority of American classrooms today—children placed in average or low ability groups do attribute their difficulties and failures to deficiencies in ability, undermining their motivation to work and thus condemning them to continued poor performance. Although we may not think much of the intelligence of many of these kids, we can be assured that they *are* smart enough to understand when we don't believe in them. Their attitudes toward learning, and their behavior in school reflect their grasp of the logic of the prevailing ideas about intelligence.

³ Bernard Weiner, *An Attributional Theory of Achievement Motivation and Emotion*, Psychological Review, 1985, vol 92, #4, pp 548

A Diminished Sense of Control. Perhaps the most pernicious result of labeling so many children unintelligent is the degree to which it robs adults and children of a sense of control over the learning process. Teachers, especially those assigned to instruct 'slower' students, daily confront the task of teaching children who are considered incapable of learning. Is it any wonder that the profession is plagued with apathy and burnout? Educational psychologist Jon Saphier⁴, who has researched what he calls "the knowledge base of teaching" has argued that we already possess the pedagogical knowledge we need to educate all children. Cooperative learning, an educational approach of demonstrated effectiveness, is a case in point. Cooperative classroom organization brings students of varying achievement levels together in small, task oriented groups and structures the learning process so that everyone can assimilate complex material and practice higher order cognitive skills. Nearly everyone in education acknowledges the utility of cooperative learning approaches. Researchers in the area, led by David and Roger Johnson, have demonstrated that there are tremendous cognitive, emotional and social gains when children of different achievement levels work together, with common learning objectives and incentives structured to reward the entire group when everyone does well⁵. Low achieving students thrive in cooperative groups. They are strongly motivated to learn, since their learning is important to the entire group, and their efforts are encouraged and win them acceptance by other group members. The self-esteem of these students rises as their achievement does, and their attitudes toward academic work improve. High achievers benefit as greatly as low achievers; they develop leadership skills, greater self-esteem, and their achievement levels rise too—probably because of the beneficial effects of having to organize their knowledge and teach it to students who are less developed.

Why hasn't cooperative learning spread to all American classrooms? Why is it not taught as a standard course requirement in all schools of education? This approach, and a rich menu of other effective techniques are ignored because the evidence that they work is dissonant with the innate ability paradigm that presently structures American education. The success of cooperative learning in heterogeneous groups represents a repudiation of a system that long ago perfected methods of differentiating and separating

⁴ Jon Saphier and Robert Gower, The Skillful Teacher, 1987, Research for Better Teaching.

⁵ David W. and Roger T. Johnson, Learning Together and Alone, 1987, Prentice Hall.

students by ability. Competitive or individualistic classroom structures, where students fight it out to 'prove' who is smarter, are far more consistent with the prevailing ideas about the distribution of ability. The way we think about intelligence generates a hard shell of fatalism that has proven very difficult to break. Evidence that cooperative learning and a variety of other approaches work is widely ignored because we remain committed to the idea that most of our children are not smart enough to profit from them.

Students are subject to even stronger feelings of fatalism about the education process. Once they learn to regard academic difficulties as a function of their innate intellectual deficiencies, they also implicitly acknowledge that the whole matter of academic learning is outside of their personal control. Children in such circumstances experience a strong sense of hopelessness about schooling. As they grow up and leave school, the sense of futility follows them. We have produced large numbers of adults who have given up on their capacity to grow intellectually. At best, such people are highly resistant to the continuing education needed to match the technological advances that are transforming work in the United States, and hover at the edge of obsolescence and unemployment. At worst, many are completely closed out of productive employment in the legitimate economy, and sink quickly into the underclass, with its underground economy of crime and drugs. Bob Moses, the great strategist of the voting rights campaign in Mississippi in the early 1960's, has characterized the growing homeless segment of this population as the "first wave of uneducated, displaced people, human flotsam in an information age economy, washing up on the shores of our cities."

The innate-ability paradigm is at the heart of the disarray, the stagnation and the sense of helplessness that pervade American education. Our ideas about intelligence and development are a self-inflicted wound, generating practices that hurt children and undermine our position in the world. They are also a filter, screening out the information and techniques that could help us get better. If many children are congenitally incapable of learning complex material, what sense does it make to explore alternative pedagogical approaches and redirect billions of dollars to restructuring the education system? The same fundamental beliefs that are ruining our schools and injuring the spirits of our children also blind us to educational techniques that work, and reduce reform, in the minds of many, to an expensive exercise in futility. We are surrounded by the painful evidence that our ideas about intelligence and educability are destructive, and that the system we have built to execute them does not work. It is time we deliberately

restructure the basic assumptions that shape the way we treat our children, and employ a new paradigm as a basis for an entirely different approach to education.

II. Getting Smart: Development as Process

If nearly everyone in Japan is smart enough to learn higher mathematics, what sort of future will we build by assuming that the majority of our children are not? People are obviously not born with the same talents, in the same measure, but it is reasonable—and prudent—for us to assume that the great majority of our children, too, are endowed *enough* to achieve verbal and mathematical competence. They will live in a technological age, and operate in an international economy; we must find a basis for believing in their intelligence and managing their development.

We need a new approach to education; one that will give our children the solid base of knowledge, skills, and confidence they will need to meet the challenges of their time. An alternative paradigm, a new framework about development based on the simple proposition that "all children can learn"—once they are taught *how* to learn—will help us reorganize our thinking and our practices. A new framework will start with an empowering idea of what development is: it is a *process of building capability*. In this definition, development is not tied to some innate, fixed trait beyond our influence. It is dynamic; the capabilities of children, including high order intellectual capabilities, can be deliberately built up. In a new educational paradigm, the most important single factor controlling the learning capacity of children is a characteristic of adults: the ability to view development as a process that we have the power to manage. Taking responsibility for the development of children depends on willfully breaking the link, in our own minds, between a child's learning capacity and crude measures of intelligence. *All children can learn, if the process of learning is effectively organized and managed by adults.* A society organized around this central idea will be moved by the examples of educators who have always known that it was true, and will incorporate their techniques into an effective movement to reform our educational system.

A new framework for thinking about education will include a major emphasis on the psychology of teaching and learning, in addition to the traditional focus on transferring the content of specific subject material. It will redirect attention from the current preoccupation with sorting children, and shift primary interest to the challenge of building a basis for teaching

them. A psychologically sustaining pedagogy will include three critical elements: we must replace the old, destructive ideas about intelligence with a new, constructive conception of development; we must build children's self-confidence through positive expectations and emotional support; and we must instruct them in a general technique for development, applicable across the range of academic domains.

Teach Children a Constructive Theory of Development. The destructive idea that we have put in the heads of our children, that development is the province of an innately gifted few, must be replaced with a new idea that will provide a psychological foundation for confidence and committed study. An empowering idea, explicitly taught as part of the formal school curriculum, will define intellectual development as an ongoing process of building analytic and operational capability through effort:

Think You Can → Work Hard → Get Smart

This model⁶ underlines the notion of intelligence as something constructed, something one can build. It is an idea easily taught to young children: "If you believe in yourself, if you 'think you can', then you will be able to 'work hard' at what you are trying to learn. And if you really work, if you don't give up, you will learn. You will 'get smart'." This is an alternative, *constructive* notion about the basis of development that can be summed up in a single line:

"Smart is not something that you just are,
smart is something that you can get."

If development is understood by the child to be built up through the expenditure of effort, then the child is in control—the decision about becoming smart is in his or her own hands. Children are empowered and energized by the notion that they can choose to get smart. Instilling confidence that "smart is something that you can get", and training students

⁶ This model was devised for elementary aged children by a colleague, Verna Ford, as a variant of a more general model previously developed for older children and adults:

Confidence → Effective Effort → Development

in the techniques associated with getting smart should be primary objectives of early education, at home and at school.

Build Up Children's Confidence Through Belief and Emotional Support. Lack of confidence is the intangible at the core of the educational problems experienced by so many of our children. Building confidence in their learning capacities will be an essential part of the cure. Strong confidence generates positive attitudes toward development, positive feelings between teacher and student, energizes effort, and allows attention to focus on strategic approaches to the work of learning and teaching.

Differences in present knowledge, readiness for acquiring new concepts, or speed of learning represent differences in the exposure children have had, or natural variations in the timing of cognitive development. Developmental differences manifest in the primary grades should not be denied, but they must be put into perspective; a child who is less ready than most to read in the first grade is a child on a different schedule, not a stupid child. Developmental differences must not be allowed to trigger educational practices that disrupt the positive, confidence-building emotional connection between adults and children. With proper emotional support, all children can learn to believe in their own capabilities. A confident child can confront difficulties without giving up. A child who can stay with it, who can continue to work, will eventually close the gap and blossom in his/her own time.

Positive expectations and emotional support are powerful tools that adults can use to shape the confidence of children. Jon Saphier suggests a three part communication combining the two:

- This schoolwork I am asking you to do is important.
- I know you can do it, and
- I won't give up on you.

The belief in the child expressed in this kind of communication is experienced emotionally. It is a gift, an embrace: "I believe in you, and I won't give up on you." Children need love and affirmation to grow confident and strong, and they respond to expressions of support and belief from authority figures. Building confidence must become a major objective of all instruction, especially in early education. Each child should finish

every academic year not only with an increased knowledge base, but with a stronger faith that "I am the kind of person who can learn whatever is taught to me in school."

Teach Children the Efficacy of Effective Effort, Step-by-Step. Children who believe that they can learn are able to give their full commitment to learning the *process* of learning; they are, in fact, eager to do so. What we have characterized as the "step-by-step process of development" represents one simple, easily learned technique for 'getting smart'. It begins with teaching a child to choose an appropriate starting point, one that matches the difficulty of the material to be learned with the present capabilities of the individual. Initial objectives should be somewhat challenging (involving a stretch, and some real possibility of failure), but very realistic (failure may be a possibility, but the goal is within the range of what is realistically attainable). In the model of development we are proposing here, note that assessment of present capability (not innate ability) is a tool in the process of getting better, rather than the final judgment about how good one can become.

Goals that are both challenging and realistic stimulate effective effort and greater satisfaction with the work. A starting point that is realistically geared to the present capabilities of the child stimulates a belief that "I can do this" and engenders stronger commitment of effort to the task. The perceived challenge, or difficulty involved results in feelings of satisfaction with eventual success, and increased confidence. Confidence and satisfaction with the results of previous efforts drive the next stage of the process: incrementally increasing the level of challenge, or difficulty of the objective, and engaging again. Each success generates increased confidence and satisfaction, and energizes a more challenging objective for the next attempt.

As goals become more challenging, they evoke greater focus; the individual becomes increasingly absorbed, immersed in the detail and the work. This heightened involvement alters the experience of the task. The work becomes enjoyable, learning more rapid, understanding is deepened. Increasing challenge stimulates changes in the approach to the work, too. As objectives become more difficult, but success still seems possible, the individual is strongly motivated toward strategic thinking. Prioritizing

action steps, working collaboratively with others, more innovative, more economical, or more pragmatic approaches to the work will often result.

A failure in this system is not viewed as an indication of the limits of one's abilities (how many of us, raised in the innate ability theory of development, reacted to our first real difficulty in mathematics—often in algebra or geometry—by declaring ourselves unequal to the demands of math and carefully avoiding it thereafter?). Failure is simply feedback about one's readiness to accomplish this particular objective. Failure stimulates corrective action; an increase in intensity of effort, review of basic concepts, a search for help, or a re-examination of strategies, with no destructive loss of confidence or self-esteem.

One important implication of a step-by-step approach is that it honors the individual schedule of the child. It is appropriate that we set firm standards of mastery for the end points of instruction (academic years, graduation dates), but we will not be successful in getting children to meet those standards by starting everyone at the same point, and then attempting to push them along at the same pace and labeling those who don't keep up as "slow". Instead, instruction must be geared to finding the correct starting point for each child, instilling initial confidence, teaching him/her to think of failures or difficulties as feedback calling for a different, more effective approach to the task, and then supporting him/her through the step-by-step process of effective application of effort at increasingly challenging goals.

The Efficacy Program. There is evidence that an approach that focuses on the psychological aspects of teaching and learning can have a strong impact on student performance, very quickly. In Detroit, more than a quarter of the city's 3rd and 6th graders, and their teachers, participate in a comprehensive Efficacy Program that operationalizes the 'get smart' paradigm through intensive training. Teachers are asked to embrace an assumption that "all children can learn." They are provided with concrete strategies for managing their students' development, and for setting up learning environments that emphasize confidence building and emotional support. Their students study an Efficacy Curriculum of experiential learning modules that emphasize the notion that "smart is something you can get—if you know how." The curriculum offers instruction in the 'step-by-step process of development' and provides opportunities to practice the process and verify its effectiveness. In studies conducted by the Research and

Evaluation Department of the Detroit Public Schools, 3rd⁷ and 6th⁸ graders performed dramatically better on both the verbal and math portions of the California Achievement Test than a control population of students who did not participate in the program.

The Efficacy Program, working with "at risk" inner city students, and a variety of other approaches in use across the country, have shown their utility. They work because children are capable of embracing their own development as a primary objective, a challenge, something to look forward to. They will do so in large numbers when they realize how important their development is to us, when they learn the process of development, and when they understand, with a certain knowledge, that we believe they can do it.

III. The Social Construction of Intelligence.

There is nothing particularly new in the 'new' framework for development I am proposing. It is simply a way of organizing discussion of a set of techniques that effective teachers and parents have always used. These techniques have a long tradition in American culture, but they exist outside the current mainstream of educational thinking and practice. This is what must change; a truly effective pedagogy that instills confidence in children and shows them how to learn must become the central focus of a national thrust for educational reform. Such a change can only come about through a transformation of our most fundamental assumptions about education—a paradigm shift that will focus our attention on the wonderful potentials of all children, instead of on an exaggerated sense of the differences among them.

The fundamental problem of the present system is that it undermines the capacity of children to commit their effort to learning. The testing/tracking approach to education, based on the assumption that intelligence is fixed, unequally distributed and controls learning capacity, is an assault on the confidence and self-esteem of most of our children. It damages their spirits and obstructs their motivation to work at learning, thus undermining the long-term competitiveness of the economy that will depend on the development of their capabilities. The present educational paradigm has

⁷ Mike Syropoulos, Efficacy, The Elementary School Program, 1989-90, Detroit Public Schools Research and Evaluation Department Report, August, 1990.

⁸ Mike Syropoulos, Efficacy, The Middle School Program, 1989-90, Detroit Public Schools Research and Evaluation Department Report, August, 1990.

deep historical roots, and its assumptions are now taken for granted—unquestioned even by those whose victimization is greatest. It is hard to imagine that we could have devised a more destructive system if we had deliberately set out to do so.

Intelligence, properly understood as a process of 'getting smart', is a social endowment, not a genetic one. Children may become confident and smart through the deliberate actions of the adults responsible for them. We are confronted now with a critical choice: we can learn to think and behave in a manner that builds the intelligence of our children, or not. Our most successful international competitors do believe in their children, and they act on their belief. They de-emphasize ability differences, understand the causal relationship between effort and development, and achieve spectacular educational results by setting high expectations, inspiring self-confidence, and instilling strong cultural values around effective effort. We must do the same, at all levels of society and with the full diversity of our population. It is within our power to *decide* to believe in children; once we accept the idea that they can learn, we will discover within ourselves the will and the know-how to restructure our schools and our pedagogy, and enough faith in the future to invest our resources and our best people in education.

The transformation is not likely to be entirely peaceful. There are important, entrenched interests committed to the old approach: educators who, in good faith, have built their classroom practices on accepted ideas about intelligence and learning capacity, and who may view critiques of these practices as an attack upon the very meaning of their careers; educated adults who are the 'winners' in the old system, whose self-concepts are grounded in membership in an exclusive club of the 'very smart' elite, and who may, (perhaps less than consciously) resist the democratization of intelligence; the testing and assessment establishment, the producers of standardized tests and expertise in a system based on the notion of an unequal distribution on intelligence, who have a direct economic and professional stake in its continuation; and the parents of 'very smart' kids, who have cultivated skills in negotiating the present system to the great advantage of their children, and who may be reluctant to see that advantage neutralized or watered down by extending the fruit of a rigorous education to all.

In the contention that is likely to accompany change, we must stay focused on broader national interests, and on the implications of this struggle on the quality of the lives that all of our young people must lead. There will, in

fact, be no losers in an effective system built on the presumption that "all children can learn." Far from watering down the excellent education we presently offer to a narrow segment of our population, a system aimed at teaching all, and holding itself accountable to do so, will unleash the intelligence of educators to find new, more effective pedagogical techniques that will benefit everyone. We are all in the same boat, and we simply cannot afford for a large segment of the American population to remain undeveloped. In the world we are creating, it is immoral to deprive any of our children of the knowledge and skills they need to prosper in it.

Ultimately, it is the ranking of societies, not children, that will determine the quality of our lives. The most important criterion for the international sorting process we are living through is no longer military prowess, or natural resource reserves, and it is certainly not scores on standardized tests. It is the degree to which a society learns to develop its children that will determine its place in the world of the 21st century. The ideas that structure the present system of American education are clearly interfering with our capacity to transfer knowledge and skills to our children, and matters will only improve when we organize a broad constituency for change, based on an optimistic assessment of our children's capabilities. The will to restructure our education system, and the courage to invest in it, are contingent on the belief that our kids will prove equal to the considerable, and unpredictable demands of their time. Learning to believe that they can learn, and that we can learn to teach them, will require an act of faith, in children and in ourselves. It is a faith that will restore our confidence in the future.