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INEQUITY IN EQUITY: How "Equity" Can Lead to Inequity for High-Potential Students

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Over the past three decades, the achievement of waves of American students with high intellectual potential has declined as a result of inequity in educational treatment. This inequity is the result of an extreme form of egalitarianism within American society and schools, which involves the pitting of equity against excellence rather than promoting both equity *and* excellence, anti-intellectualism, the "dumbing-down" of the curriculum, equating aptitude and achievement testing with elitism, the attraction to fads by schools, and the insistence of schools to teach all students from the same curriculum at the same level. In this article we provide recommendations for creating positive change—recommendations that emphasize excellence for all, that call for responsiveness to individual differences, and that suggest basing educational policies on well-grounded research findings in psychology and education. Educational policies that fail to take into account the vast range of individual differences among students—as do many that are currently in use—are doomed to be ineffective.

Much has been said about the relative standing of American students in international comparisons of mathematical and scientific achievement. Such comparisons—regardless of who conducted the survey, the instruments used, and the age of individuals studied—repeatedly have shown that students in the United States typically rank toward the bottom of industrialized nations[1] in the range of achievement reported (Barton, 1990, 1993; Elam, 1993; Husen, 1967a; IEA, 1995; LaPointe, Mead, & Askew, 1992; McKnight et al., 1987; Medrich & Griffith, 1992; National Center for Educational Statistics, 1992; Romer, 1991; Travers, Garden, & Rosier,1989). Such findings have been well publicized in both the popular media and in scientific outlets, indicting the American educational system in the process (Berliner & Biddle, 1995) because cross-cultural differences in achievement vary directly with cross-cultural differences in curricula (Geary, 1995; Geary, Salthouse, Chen, & Fan, in press; Husen, 1967a, 1967b). Berliner and Biddle (1995) and Bracey (1991, 1996), among others, have challenged these assertions, however, and have shown convincingly (as did Herrnstein & Murray, 1994) that the achievement of average-ability students has actually remained steady, and even

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[1]Many people in the comparisons are being compared, as with U.S. samples, with strictly first-world countries. This tends to depress the United States's scores. Use of aggregate scores also is misleading and difficult to interpret (Berliner & Biddle, 1995).

improved for minorities, over the past three decades. These authors have asserted that the claim that American public schooling is failing is a manufactured crisis; rather, they have argued, public education should receive high marks because its performance borders on the miraculous at times. As we see it, the truth probably lies somewhere in between (Koretz, 1992).

Nonetheless, often ignored in the debate about the success of American public education is the relatively poor performance of America's brightest students. (Archambault et al., 1992, 1993; Westberg, Archaumbault, Dobyns, & Salvin, 1992). The achievement of the most able U.S. students lags behind that of their counterparts in other industrialized nations and is well below both the level of their own potential and the achievement levels of previous U.S. generations. It is their achievement that can provide substance to the following controversial conclusion in A Nation at Risk (National Commission on Excellence in Education, 1983): "Each generation of Americans has outstripped its parents in education, in literacy, and in economic attainment. For the first time in the history of our country, the educational skills of one generation will not surpass, will not equal, will not even approach, those of their parents" (also see Mullis, Owen, & Phillips, 1990). Our nation's brightest youngsters, those most likely to be headed for selective colleges, have suffered dramatic setbacks over the past two decades. This has grave implications for our country's ability to compete economically with other industrialized nations (Bishop, 1989; Boissiere, Knight, & Sabot, 1985; Rivera-Batiz, 1992; Singal, 1991).

To some, these assertions may appear confusing, because bright students appear to be performing well if we look at standard performance evaluations. This is because the evaluation criteria schools employ are too shallow for use with highly able students. In psychometric terms, most assessment instruments used have "low ceilings"—in other words, not enough "top" to capture the scope of these students' capabilities. Test are much too easy for them, such that the whole group scores at or near the top of the scale, and the observer cannot discriminate between exceptional and truly profound achievement within intellectually precocious samples (cf. Achter, Lubinski, & Benbow, 1996). Nor are many aware of the remarkable width of the range of individual differences within an age group. For example, among ninth- through 12th-grade high school students, the range of achievement in various academic subjects is genuinely phenomenal. Figure 1 (from Learned & Wood, 1938) illustrates this point, and figures like it can be found in the psychological literature (for every decade) for the past 70 years. A close examination of this figure reveals that younger students in the same grade tended to have more knowledge about key academic topics than older students in the same grade. Moreover, approximately 10% of twelfth-grade students under 18 years of age had more scientific knowledge than the average college senior!

Bright students can achieve well not only in subjects at their grade placement but also at much higher levels. For example, 13-year-old students in the top 1% in abilities relevant to academic excellence (e.g., mathematical, spatial, or verbal reasoning) can assimilate and retain a full school year of high school biology, chemistry, Latin, physics, or math in 3 intensive weeks of schooling (e.g., Lynch, 1992; Stanley & Stanley, 1986). They also can master a full semester of first-year college-level English, logic, computer science, psychology, and so on in the same

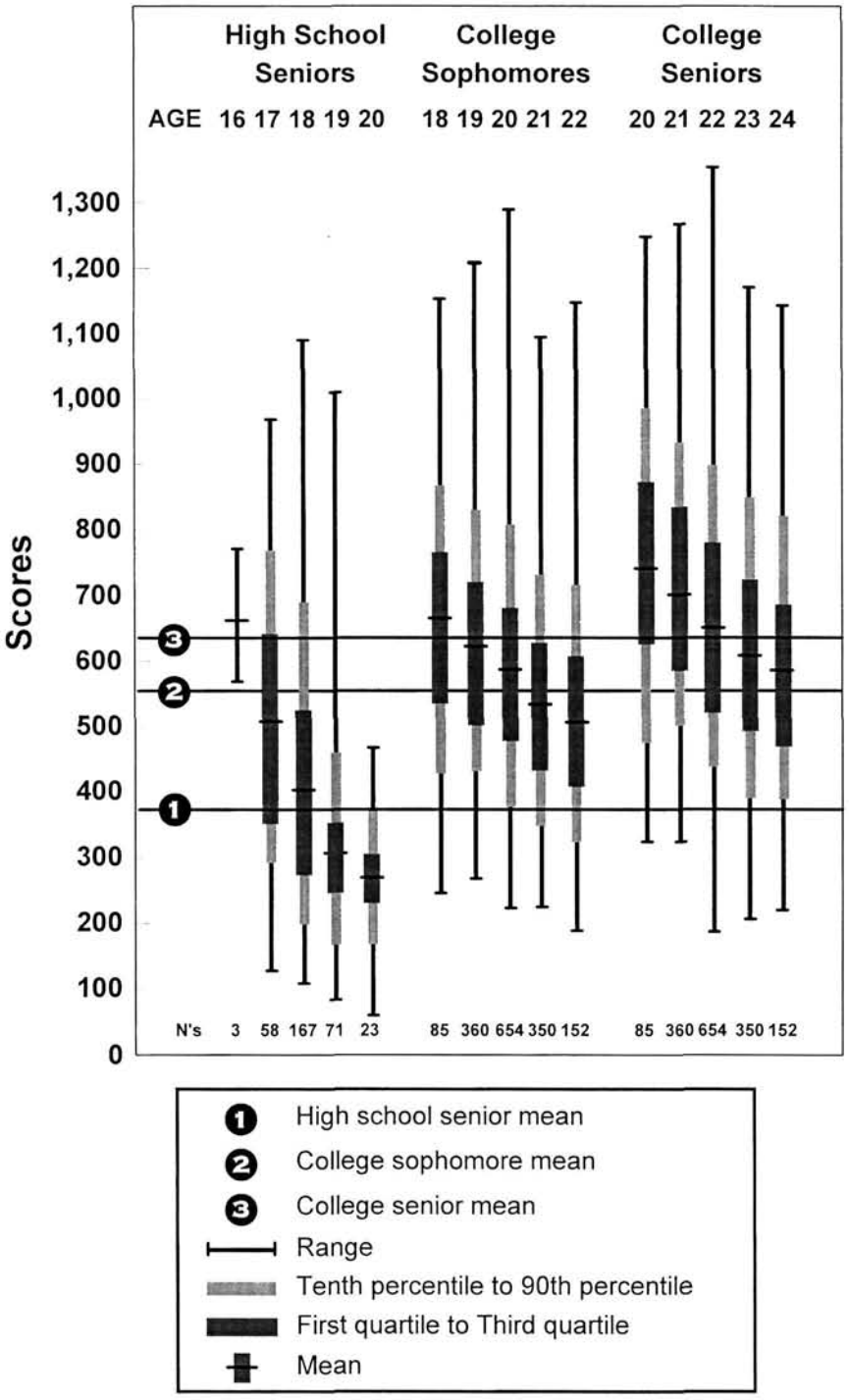

Figure 1. Overlapping of total score distributions of high school senior, college sophomore, and college senior men on an extensive battery of cognitive tests [adapted from Learned & Wood (1938), p. 278].

amount of time. They do this routinely in summer programs for talented students at Iowa State University and at similar programs across the country and have done so for almost 25 years (Stanley, 1973). Most enjoy the experience (Benbow, Lubinski, & Suchy, 1996). We feel that the extent to which readers find this surprising reflects the degree to which our schools lack challenge for the precocious, as the great Harvard personologist Gordon Allport (1960) depicted in his commentary on higher education:

> It is my own conviction that most of our institutions of higher learning offer intellectual fare distressingly below the digestive capacity of the gifted. I am not thinking merely of colleges that offer the frivolous course in fudge-making, but of our "best" institutions, where courses are often repetitive, routine, and devoid of challenge. Perhaps from the point of view of the average student they are adequate, but they stretch no nerve in the gifted student. . . . Usually such a student does well, and the teacher rejoices, but in many cases the teacher should feel less joy than guilt, for he has, intentionally, beckoned the gifted student downward toward mediocrity rather than upward toward maximum self-development. (p. 68)

We shall document the downward decline of American students with high intellectual potential and discuss the forces in U.S. society, in particular in its educational system, that can provide a partial explanation. We shall argue that these forces, broadly categorized as parts of an extreme form of egalitarianism, involve the pitting of equity against excellence rather than promoting both equity and excellence in schools; anti-intellectualism in American society as well as within schools; the "dumbing-down" of the curriculum; equating aptitude and achievement testing with elitism; the attraction to fads (or novelty) by schools; and the inflexibility of the age-in-grade, lock-step educational system (i.e., the determination of many educators to use the same curriculum at the same pace with all students). Extreme egalitarianism has led to a situation in which many of the brightest students, especially bright minority students, are being treated inequitably because they are not provided with an appropriate education. As Dr. Gregory Anrig, former president of the Educational Testing Service, asserted, American schools have devoted so much energy to bringing up the bottom that they have failed to challenge students at the top ("Top Students," 1991). As a consequence, intellectually advanced students are being deprived of opportunities to develop their potential. Indeed, John Gardner (1984, p. 34) noted that, "to the extent that we move toward excesses of equalitarianism, we may learn our lessons only at the hands of more vigorous outsiders." We believe that Americans are now witnessing the consequences of that lesson.

We shall conclude with recommendations for creating positive change, change that may restore a better balance between America's two strivings: educational equity and excellence (Gardner, 1961, 1984). It is interesting to note that improving the education that intellectually capable students receive does not necessitate large increased expenditures by schools and, hence, is not at the cost of any other group of students. The main requirement is administrative flexibility. Yet, even if there were a price-tag, would it not be a fair proposition to suggest that at least 10% of the funding that currently goes toward special education be ear-marked for the special needs of precocious students (Belin, 1995), rather than the current low level of 2 cents out of every $100 spent in education (Brimelow, 1994; Sykes, 1995)?

The Decline at the Top

In contrast to widely held beliefs, Americans with average or even below-average abilities are today probably better prepared academically than ever before (Berliner & Biddle, 1995; Bracey, 1996; Herrnstein & Murray, 1994). Yet the reverse is true for the most intellectually able. It is well known that the achievement of all students suffered a major decline in the 1960s (Bishop, 1989; Koretz, 1986, 1992). Although the performance of other groups of students eventually recovered and has continued to improve, this rebound has never materialized for students with the greatest cognitive capabilities (Herrnstein & Murray, 1994; Singal, 1991). In this section we provide substantiating data, much of which were summarized by Herrnstein and Murray (1994) and Berliner and Biddle (1995), to support these assertions.

Average-Ability Students

Let us first consider the College Board Scholastic Aptitude Test (SAT) (Donlon, 1984). The SAT was designed for above-average ability, college-bound students who take the test of their own volition. Most findings from the SAT, therefore, are based on this group. Nonetheless, national norms for representative samples of U.S. students are available for various times. Inspection of these normative data reveals that there was essentially no decline in SAT scores between 1955 and 1983 for American students as a whole. In 1955 the mean verbal score was 348, whereas the mean math score was 417. In 1960, just before the decline began in SAT math and verbal scores for college-bound students, the verbal score for a random sample of American 11th-grade students was 374 and the math score 410. In 1983 the scores were 376 for verbal and 411 for math.

Results from the National Assessment of Educational Progress (NAEP), which began in 1969 and is designed to obtain data on a nationally representative sample of students, reveal a similar pattern. Earliest achievement test scores in reading, science, and math are quite similar to those obtained in 1990. If anything, scores rose rather than declined during this period (Berliner & Biddle, 1995, pp. 27–28; Carson, Huelskamp, & Woodall, 1991; Educational Testing Service, 1990; Herrnstein & Murray, 1994, p. 422; National Center for Educational Statistics, 1991). The Iowa Test of Educational Development (ITED) has been administered to nearly all of Iowa students for almost 50 years. This largely White and rural population of students has revealed the following trends: an increase in performance from the early 1940s to the mid-1960s, followed by a sharp drop between 1966 and 1978, and then a rebound and steady improvement through to the present. The increase in performance between 1942 and 1992 approached a full standard deviation (Herrnstein & Murray, 1994).

Rudman (as quoted in Singal, 1991), a co-author of the Stanford Achievement Test, has noted that between 1920 and the late 1960s American children taking the test exhibited marked gains in achievement levels. Indeed, these gains were so great that revisions were necessary each decade to make the test more difficult. Then, from the late 1960s to early 1980s, almost all the gains from the previous three decades were washed away. In the past 10 years, there has been another cycle of improvement; but this is not the full story. The most telling findings emerged when the sample taking the Stanford Achievement Test was split into groups according to ability. Students in the bottom quartile showed steady improvement

since the 1960s, whereas the top quartile declined. "The highest cohort of achievers" demonstrated "the greatest declines across a variety of subjects as well as across age-level groups" (Rudman as quoted in Singal, 1991, p. 60).

Linn, Graue, and Sanders (1990) provided further data supporting Rudman's claim. They inspected scores over time on the most widely used commercial tests of achievement (e.g., the Iowa Test of Basic Skills—ITBS; and the California Achievement Test—CAT). Each year students posted higher scores on both reading and mathematics on all of these commercial tests. For the CAT, the average annual gain in percentile rank was 2.10 for reading and 2.04 for math. Moreover, in 1986 Hieronymus and Hoover claimed that composite achievement on the ITBS was at an all-time high in nearly all test areas. Hoover was quoted in Bracey (1996) for making similar claims for the 1990 data.

Project Talent, a monumental study of high school students begun in 1960 (Flanagan et al., 1962), readministered its reading comprehension test to a nationally representative sample of 11th-grade students in 1970. Again, gains over the previous decade were posted for this cross-section of America. It is ironic that this occurred during the time when the SAT registered its largest declines among college-bound students (Herrnstein & Murray, 1994, pp. 423–424). In the 1980s, data amassed by the Congressional Budget Office (1986) for Virginia, New York, Texas, and California also showed this pattern.

Finally, average scores of Americans on the Wechsler and Stanford-Binet intelligence tests have been increasing (Flynn, 1987). Increases in intelligence (i.e., the "Flynn Effect") have been posted for every decade since 1932, similar to what is found for achievement—a converging line of evidence that, in general, the United States has not been deteriorating intellectually.

We conclude that the performance of American students as a whole has demonstrated steady improvement since the 1920s. This conclusion does not fit well with the picture painted in the popular media of a nation at risk, however (Berliner, 1993; Berliner & Biddle, 1995; Bracey, 1991).

Academically Capable and Talented Students

The picture of academically capable and talented students is quite different; these students' performances are the cause for concern. We begin with the well-publicized score declines on the SAT among college-bound high school students. The decline began in 1963, and scores continued to decrease steeply until 1980 (Koretz, 1986). The drop was almost a half standard deviation on SAT-V and almost a third on SAT-M (Herrnstein & Murray, 1994, pp. 425–427). The composite verbal and math score dropped from 980 in 1963 to 890 in 1980. Race, class, parental education, composition of the pool, and gender could explain only about half of the decline (Advisory Panel on the Scholastic Aptitude Test Score Decline, 1977; Koretz, 1992). In fact, the scores for African Americans and Hispanics increased during this period (Burton & Jones, 1982; College Board, 1991; Koretz, 1992; Sowell, 1993).

The picture is bleakest, however, for America's most able students, the intellectually talented. In 1972, 11.2% of the high school seniors taking the SAT had verbal scores of more than 600. By 1983 this had dropped to 6.9% (Singal, 1991), a 38% loss. Moving upward to a higher echelon of talent, among those scoring 700 or more on the SAT-V, there was a 41% drop in the *actual number* of

such students from 1972 to 1993 (from 17,560 to 10,407), even though more students were taking the SAT. SAT-M presents a different story. The percentage of scores that equaled or exceeded 600 did drop from 1972 to 1981, but the drop was less than 20% (17.9% vs. 14.4%) (Singal, 1991). Moreover, by 1991 this percentage had returned to the 1972 level. As a matter of fact, 17-year-olds scoring 700 or more on the SAT-M increased by 143%. If only White Americans are studied, the percentage increase is still a solid 104% (Herrnstein & Murray, 1994, p. 428). An examination of GRE test scores reveals a similar pattern (Herrnstein & Murray, 1994, p. 429).

Even though SAT-M scores have actually increased recently for intellectually precocious students, the top 5% of American high school seniors nonetheless scored last on algebra and calculus tests administered to the top 5% of 12th graders from a dozen countries (U.S. Department of Education, 1986). In addition, it is in the items requiring higher levels of thinking (e.g., application, analysis) in which the largest differences emerge in international comparisons, not the items that focus on the rote recall of facts (LaPointe, Mead, & Phillips, 1989).

The previous sections have painted a picture of steady improvement in academic performance for below-average and average-ability students since the 1940s, with a temporary dip during the 1960s. Yet for America's brightest students, most of whom go on to college, the situation is reversed. For more than three decades each successive wave of such students has experienced a decline. Although the decline in mathematical ability eventually reversed itself, the marked decline in verbal ability has continued steadily for more than three decades. Either because of this—in conjunction with an ever-larger number of students attending college—or because it is endemic for older populations to voice such worries (Berliner & Biddle, 1995), universities are expressing concern regarding the preparedness of students for college work (Choy & Gifford, 1990; Singal, 1991; Stahl, 1981). Moreover, the decline appears to be viewed as permanent. The College Board changed the scoring system used on the SAT so that both the verbal and math scores are directly comparable again. What has happened? We believe it is extreme egalitarianism.

Excellence Versus Equity: An Unnecessary Tension

Perhaps one of the most difficult tensions permeating American society, and hence its schools, is between equity and excellence (Cuban, 1990; Gardner, 1961, 1984; Resnick & Goodman, 1994). According to Gardner (1961, 1984), two hopes drive American society: individual achievement (or excellence) and equality. American society functions on the belief "that everyone would be free to perform at the level of his or her ability, motivation, and qualities of character and be rewarded accordingly" (Gardner, 1984, p. 22); people should have the opportunity to develop excellence and be able to go where their talents take them. The other force in American society is that all should be equal. To facilitate the latter, unequal treatment of unequals is provided in an effort to make them more equal, a philosophy that supports the compensatory-education preschool program, Head Start, and Chapter 1, for example. We believe it is critical for schools to focus on both individual achievement and equality, as both are challenges for American public education (Gardner, 1961, 1984; Singal, 1991). Economically disadvantaged children attending inner-city schools usually operate in environments that

make it difficult, if not impossible, to learn. Students with developmental disabilities or those who demonstrate less readiness to learn need extra assistance. Much attention has been focused on such concerns, and that is proper. Such children need dedicated teachers and a sound curriculum; they also need a safe school environment and parental support (Lykken, 1995). It is only equitable that they be provided with resources so that they too can develop to their full potential and grow up to be optimally functioning citizens.

The other challenge for education is less obvious than the one just noted; it involves nurturing the talents of America's intellectually advanced students. They too need a chance to develop to their full potential. Many are not receiving this opportunity and, collectively, they constitute America's largest group of underachievers (Reis, 1989).

Progress of society depends on dealing with both challenges (Gardner, 1961, 1984): We need to ensure that the distribution of educational resources is equitable; we also need to foster the development of excellence within children. Yet we seem to develop policies viewing excellence and equity as polarized incompatibilities of a zero-sum game, excellence *versus* equity, not excellence for all (Cuban, 1990). When excellence is of concern, Americans become too competitive. When equity is of concern, as it is currently and was in the 1960s, we dismantle programs designed to develop excellence (Sykes, 1995; Tannenbaum, 1979; Winner, in press). Americans become hostile to precocious students, including highly achieving minority students. Some in Australia call this trend *coercive egalitarianism* (Schroeder-Davis, 1993) or *ressentiment* (Friedenberg, 1962)— "cutting down the tall poppies." No one should stand out (Sykes, 1995). Yet, "holding back the brightest students will not magically help the slower ones; *bringing the top down does not bring the bottom up*" (Silverman, 1994, p. 3).

This misguided view reflects our changed meaning of equality. According to Fromm (1956, p. 15), "In contemporary capitalistic society the meaning of equality has been transformed. By equality one refers to the equality of automatons; of men [and women] who have lost their individuality. *Equality today means 'sameness,' rather than 'oneness'* " of previous eras. We equate equality with identity (Mayr, 1963). Hence, today we strive for sameness in educational outcomes, rather than providing equal opportunities to develop differing potentialities, because educational outcomes have become a metric for human worth. Yet human dignity and worth should be assessed only in terms of those qualities of mind and spirit that are within the reach of every human being.

As much as we would like to see it, expecting equal educational outcomes is not realistic. It belies robust findings from developmental and educational psychology and behavior genetics, which have revealed large individual differences in the rate of learning of school children and concluded that at least half of these differences are results of genetic variation (e.g., Bayley, 1955, 1970; Bouchard, 1993; Bouchard, Lykken, McGue, Tellegen, & Segal, 1990; George, Cohn, & Stanley, 1979; Keating, 1975; Keating & Schaefer, 1975; Keating & Stanley, 1972; Pedersen, Plomin, Nesselroade, & McClearn, 1992; Robinson & Robinson, 1976). Moreover, the rate of learning for each child varies considerably as a function of content area (verbal, numerical, and spatial) (Ackerman, 1987; Carroll, 1985; Humphreys, 1979; Snow, Kyllonen, & Marshalek, 1984). As was concluded in the *Prisoners of Time* report (NECTL, 1994, p. 7): "If experience,

research, and common sense teach nothing else, they confirm the truism that people learn at different rates and in different ways with different subjects. . . . Some students take three to six times longer than others to learn the same thing" (p. 15). These individual differences in rate of learning lead to differential academic outcomes, even among the intellectually able (Benbow, 1992a; Chauncey & Hilton, 1965; Harmon, 1961).

Responding to these individual differences and allowing for differential outcomes do not create elitism, a frequent charge against programs for precocious students. It is just the opposite (Allan, 1991). Hollingworth, reporting on research findings from studies of ability grouping, noted that "Conceit [of precocious students] was corrected, rather than fostered, by the experience of daily contact with a large number of [academic] equals" (Hollingworth, 1930, p. 445). As a matter of fact, decline in academic self-concept among precocious students has been documented as a result of participation in special programs (Gibbons, Benbow, & Gerrard, 1994; Marsh, Chessor, Craven, & Roche, 1995). We do not view this decline as negative, because precocious students' self-concepts become more realistic through such experiences (Robinson & Noble, 1991). Moreover, when talented students are appropriately served, they also develop enhanced ability to get along with their age mates (Gross, 1993). This is probably because the development of faith in the potentialities of others, as well as in oneself, is possible only to the degree to which one has experienced the growth in one's own potentialities, the reality of one's own growth, and the strength of one's own power of reason (Fromm, 1956).

Further, we know that effective teaching involves providing the *optimal match* (Durden & Tangherlini, 1993; Hunt, 1961; Robinson & Robinson, 1982; Robinson, Roedell, & Jackson, 1979; Vygotsky, 1962), the posing of problems to an individual student that appreciably exceed the level already mastered. Too-easy problems lead to boredom, too-difficult problems lead to frustration. Neither promote optimal learning or motivation to learn. "Available evidence suggests that when the variables of quality of instruction and opportunity to learn are properly managed, the variable of student perseverance—willingness to learn—will take care of itself" (Carroll, 1989, p. 30). This leads to an adaptation of a quote by Thomas Jefferson: There is nothing so unequal as the equal (same) treatment of unequals (people with differing abilities).

It is also useful to note in this context that, although some other countries enable their brightest students to go as far as possible in their learning and actually celebrate their accomplishments, we have adopted the notion that one curriculum fits all. We also use our most able students to serve as assistant teachers, on the flawed pretext that you learn something best when you teach it, instead of allowing them to progress and develop their abilities through encounters with increasingly complex and challenging curricula.

We need to provide *all* children with an equal opportunity to learn and to develop to their full potential. This is consistent with the true meaning of education. The Latin root of the word *education* is *e-ducare,* which literally means to lead forth or to bring out something that is potentially present. This involves being responsive to, and building on, individual differences. A one-size-fits-all educational system is not effective and hence not equitable. Equity should be viewed as equal access to an *appropriate* education. In the words of Sirotnik

(1983, p. 26), "Quality of schooling includes not only time-on-task, but time well spent." We believe that eliminating sound programs for precocious students, programs that respond to their unique learning needs and ensure that their time is well-spent, should be considered as unethical as eliminating such programs for individuals with developmental disabilities. The ideal of a fully humane society is to treat all individuals and groups with concern and understanding—in other words, to be responsive to diversity.

Anti-Intellectualism

Americans and many others tend to be hostile to intellectual pursuits and those who are seen as intellectually precocious (Hofstadter, 1963; Winner, 1996). There is "an atmosphere of fervent malice and humorless imbecility" Hofstadter, 1963, p.3) aimed at gifted achievers. Our society not only permits but also applauds certain areas of talent, such as sports, music, and the arts (Brown & Steinberg, 1990; Coleman, 1960; MacDonald, 1994). Yet intellectual talent generates considerable ambivalence, perhaps even threatening the self-esteem of others (e.g., Coleman, 1962). Schroeder-Davis (1993), Friedenberg (1962), and Sykes (1995) labeled this phenomenon as envy and punishment by peers, within a general ambiance of resentment—"the pursuit of excellence through isolation, prejudice, teasing, stereotyping, alienation, and, if all else fails, intimidation and physical violence" (Schroeder-Davis, 1993, p. 5).

For example, in a sixth-grade classroom, Torrance (1963) assigned students who had been identified as "high creatives" to work with four less creative individuals to solve a demanding task as a cooperative group. If the task was successfully completed, all the students would be rewarded. Torrance observed the following behaviors directed at the high creatives by their less creative peers during the cooperative activity: "Techniques of control include open aggression and hostility, criticism, rejection and indifference, the use of organizational machinery to limit scope of operations, and exaltation to a position of power involving paper work and administrative responsibility."

Tannenbaum (1962) administered a questionnaire to high school students, asking them to rank the following three personality attributes: brilliant–average, studious–nonstudious, and athletic–nonathletic. Using the resulting response data, Tannenbaum constructed the most desirable "hypothetical" peer. The preferred attribute combination was the brilliant–nonstudious–athlete, whereas the least desirable combination was the brilliant–studious–nonathlete. The latter is, of course, the common stereotype of the gifted child. Tannenbaum concluded that a hard-working gifted student who has little if any interest in sports probably has little chance of being accepted by his or her age peers. Coleman (1960) reached the same conclusion by studying high school students.

Has the situation changed over the past 30 years? Cramond and Martin (1987) repeated Tannenbaum's study using 100 college students majoring in education. Their results were essentially identical to those of Tannenbaum's adolescents. As in the original study, athleticism was most valued. And again, the brilliant–studious–nonathlete student was least desired. Do these findings change if the raters are seasoned teachers instead of students training to become teachers? To answer this question, Cramond and Martin administered their instrument to 83 experienced teachers undertaking graduate study and found that the findings do not change.

Average–nonstudious–athletes were seen as most desirable and brilliant–studious–nonathletes were seen as the least desirable. Experienced teachers seemed to prefer the average student, not the brilliant one (Cramond & Martin, 1987; Solano, 1977). It is interesting to note that brilliance was not a critical factor for high school students in Tannenbaum's (1962) study. Rather, how brilliance combined with the other two dimensions was determinative. That is, a brilliant student who is nonstudious and athletic is seen as acceptable by his or her peers. It appears that students will not handicap a brilliant student if he or she cannot be faulted for being brilliant. Yet the hardworking gifted student is often taunted, being called a "greasy grind," "nerd," or "dweeb" (Brown & Steinberg, 1990; Coleman, 1960; Office of Educational Research and Improvement, 1993) or "high achieving drudges" (Berliner & Biddle, 1995). To pursue excellence, the students are forced to forfeit intimacy with their age peers (Gross, 1989)—a Faustian deal of sorts.

The situation is especially difficult for highly able urban minority students (VanTassel-Baska, Patton, & Prillaman, 1991). African American students are accused by their African American peers of "acting White" if they try to achieve in school (Fordham, 1995; Gregory, 1992; Office of Educational Research and Improvement, 1993). African American urban teenagers who try to achieve must do so in a hostile environment created by groups or gangs who terrorize bright African American students. These gangs not only physically abuse highly achieving students, they also intimidate them with death threats. Gregory (1992) concluded that the "pattern of abuse is a distinctive variation of nerd bashing that almost all bright, ambitious students—no matter what their color—face at some point in their young lives" (p. 44).

Here is a recent example of what, typically, a bright and ambitious student might face in a related context. A White female wanted to graduate from high school early. Her father described the response by some of her teachers:

> One member chose to repeatedly denigrate Susan's decision in front of her classmates. Another initially refused to prepare an early semester final test, a courtesy normally accorded to graduating seniors. One or more unknown faculty members (a secret panel reportedly using a blackball system) also chose not to allow Susan to be admitted to the National Honor Society even though her applying credentials went far beyond most inductees. (Unpublished letter from a father, May 1995)

In another instance, a high school senior who had won a national music composing contest did not receive the music award at graduation. The contest prize was deemed irrelevant because it was not school-based.

How do precocious students respond in the face of these attitudes held by their peers and teachers? Or to their peers equating "brains" of a nonathlete with being a "nerd" (Brown & Steinberg, 1990)? How do they respond to the discrimination against excellence in academics? Highly achieving gifted students often employ various strategies to avoid being labeled or recognized as such. They use denial, distraction (displaying excellence in another realm, preferably athletics), deviance (e.g., class clown), and underachievement (Brown & Steinberg, 1990; Coleman & Cross, 1988; Gross, 1993; Swiatek, 1995). Others feel alienated or become depressed (Heiss, 1995; Jensen, 1994), which also affects achievement. Researchers of the highly gifted, as far back as Leta Hollingworth, have reported that deliberate and skilled concealment of ability for peer acceptance is endemic

among this group. For example, the majority of 160+ IQ children in Gross's (1993) study (n = 50) could not "recall a time in their lives when [deliberate underachievement] has not been an automatic survival mechanism, accepted as a painful but necessary part of living" (p. 276).

Another problem for precocious children is that few individuals, young or old, are willing to admit that they themselves have high measured ability. Some enjoy denying their abilities. This reluctance to admit to or even accept being intellectually talented casts a negative light on the label. (Individuals in Mensa are a notable exception, but their public image is not one with which a talented child would necessarily feel positive identifying.) Bereiter (1976–1977), for example, asked undergraduates if their intellectual ability, on the whole, was higher than individuals not attending college. The undergraduates denied being higher in intellectual ability. Bereiter commented that he doubted whether music students attending a conservatory would deny having greater musical ability, that art students attending an art institute would deny having greater artistic skills, or that college athletes would deny having greater athletic prowess! Yet it was, and still is, unacceptable to admit that one has greater intellectual capabilities. Why? Bereiter (1976–1977, p. 37) suggested that, "IQ is like money. Publicly you proclaim that those who have a lot are no better than those who have a little. Privately, you wish you had a lot." It seems that being talented in academics engenders envy of which hardly any other talent is quite capable.

We hear much today about teaching students to appreciate diversity, in particular cultural diversity. Why is intellectual diversity not included? We wonder if Americans would allow any other group in our society to sustain and endure the abuse that highly achieving precocious children face on a daily basis in their schools. Readers may be wondering if the "abuse" makes a difference in terms of achievement. We believe so. It has been known for some time that high-ability students are less likely to underachieve in school settings in which students have positive feelings about scholastic pursuits (Coleman, 1960). The policy implication is, then, for schools to guarantee that their climate is not hostile to any child. School climate should be free from taunts and jeers based on race, gender, age, ethnicity, religion, sexual orientation, disability, *and* high ability (Kearney, 1993). This is important for an additional reason. "School is a place for learning. The message we give to *all children* about learning is linked in part to how we treat our most rapid learners. If they are ignored, exploited, damaged, held back in their progress, or teased, the message we give to all children is that academic learning doesn't pay for anyone" (Kearney, 1993, p. 16). Change is sorely needed but, we suspect, will not come easily.

Dumbing-Down of the Curriculum

The difficulty level of the curriculum in America's elementary and secondary schools has been systematically watered down (Altbach, Kelly, Petrie, & Weis, 1991; Bernstein, 1985; Chall & Conrad, 1991; Kirst, 1982; Koretz, 1987, 1992; Sykes, 1995), some say lowered by about 2 years over the past 2 or 3 decades. In *A Nation at Risk* (National Commission on Excellence in Education, 1983), the situation was described: "We have, in effect, been committing an act of unthinkable, unilateral educational disarmament" (p. 5). That may be too extreme of a statement. Nonetheless, the need for and development of easier curricula may

be traced back as far as 40 years to James Bryant Conant, who pushed the idea of the *comprehensive high school* (Conant, 1967). Probably contrary to his intentions, this was translated into assembling students of all levels of ability, performance, and motivation in one physical setting and often into one classroom. The move to less rigorous curricula began in earnest, however, in the 1960s (Porter, 1990; Ravitch, 1983, 1985).

In part as a result of the increasing diversity of students entering public schools (but also see Sykes, 1995), education underwent reform to make it easier for the average student. As a result, it became less challenging for the precocious. Moreover, textbooks came to be judged by their readability rather than their content (Bernstein, 1985; Fiske, 1984; Gionfriddo, 1985). As a result, publishers began to remove "difficult" words and sophisticated syntax from their textbooks and lower the level of reading comprehension required. Subjects traditionally excluded in the curriculum for the lower end of the distribution (e.g., exposure to serious literature) were included but simplified to make them accessible to almost all. In this way, textbooks could be adopted in larger numbers. This was not all bad. Indeed, as discussed previously, learning for the average student was enhanced during this period of dumbing-down the curriculum. This could be a direct result of the changes in the curriculum and the form in which it was presented. A study of six textbooks over a 12-year period demonstrated, for example, that average students performed better with the simplified texts (Gionfriddo, 1985).

Because of the dumbing-down of the curriculum, adjustments to handle the educational needs of academically talented students, those for whom the curriculum was becoming increasingly less appropriate, grew in importance. This was overlooked (Archambault et al., 1992, 1993; Office of Educational Research and Improvement, 1993; Westberg et al., 1992), during the reform, however, so the problem of serving advanced students became more severe. As a result, gifted and talented elementary schoolchildren now begin the school year having already mastered from 35% to 50% of the curriculum to be offered in five basic subjects (National Commission on Excellence in Education, 1983). It is interesting to note that even for students of average ability, half of the mathematics curriculum in Grades 1 through 8 during the 1980s consisted of reviewing material already *taught* (not necessarily mastered) for all students (Flanders, 1987; Usiskin, 1987).

At the same time that textbooks were dumbed-down in the 1960s, a greater number of electives was permitted, and requirements in science, mathematics, and literature were relaxed. "Academic time was stolen to make room for a host of nonacademic activities" (National Education Commission on Time and Learning, 1994, p. 13). It is now the case that during the last 4 years of secondary school, American students spend about 40% of the time that is spent by Japanese, French, and German students on academics (National Education Commission on Time and Learning, 1994). They also spend much less time in school because the school year is significantly shorter than in most other developed countries. Furthermore, the number of courses in the core disciplines was reduced, as were survey courses and reading requirements. Subjects that would push the best students to their limits, such as classical languages, were all but dropped. (A notable exception is the College Board's Advanced Placement Program.) The end result is that highly able students came to be exposed systematically to less knowledge; they were, in essence, given less of a chance to develop expertise. Much research in cognitive

psychology and in creativity has revealed the importance of knowledge and practice for the development of expertise (Csikszentmihalyi, 1995; Ericsson, Krampe, & Heizmann, 1993; Mumford & Gustafson, 1988; Passow, 1985; Perkins & Salomon, 1989; Rabinowitz & Glaser, 1985; Schoenfeld, 1985; Simonton, 1984; Snow, 1986). Moreover, knowledge seems to push the development of the ability to problem-solve (Bloom, 1956).

Another trend, apparently beginning in the 1960s, was grade inflation (Bejar & Blew, 1981; Breland, 1976; Etzioni, 1975; Walsh, 1979). Schools began to require less schoolwork and less homework to earn good grades. For example, by the early 1980s it was found that the average student spent only 3.5 hours on homework per week (Bishop, 1993). Yet grades have gone up at all levels including college. It is interesting to note that mean course grades tend to be higher in colleges of education than in other colleges. At Iowa State University, for example, 80% of students in education courses received As or Bs, whereas only 50% of students in courses offered by the College of Liberal Arts and Sciences did. That teachers trained under a more lenient grading philosophy seem to incorporate this approach into their own work with students is one apparently plausible interpretation.

Because of the dumbing-down of the curriculum and lenient grading, intellectually talented students are given less opportunity to experience rigorous intellectual challenge. Rather, it appears that they are rewarded for cruising through school by the inflated grades they receive for their work. It is not surprising, then, that they cannot display their true potential on the rare occasion when they are presented with intellectually challenging, rigorously (objectively!) graded material, as they do when they take the SAT or College Board achievement tests or must solve difficult problems on tests used for international comparisons. The situation is analogous to requiring the talented pole vaulter to practice only on a 6-foot bar in preparation for the Olympic trials.

In our minds, the public policy implication is that we need to toughen requirements and standards for highly able students. We need to be realistic about the prospects of doing this, however. Most American parents do not want drastic increases in the academic workload or tougher grading (Berliner & Biddle, 1995; Powell, Farrar, & Cohen, 1985). Most parents complain about the general state of education but are pleased with their schools and with what their children are accomplishing (Berliner & Biddle, 1995; Elam, Rose, & Gallup, 1993; Stevenson & Lee, 1990; Stevenson & Stigler, 1992). By way of contrast, Japanese parents who have highly achieving children are not as satisfied with their children's progress (Stevenson, 1992; Stevenson & Stigler, 1992). In addition, average or even most college-bound students currently have little incentive to work harder in high school than they already do (Bishop, 1988, 1990, 1993). We recommend that bright students be given the opportunity to work meaningfully, at least as hard as their average-ability peers.

Ability Testing and Elitism

Ability tests were designed to do an unpopular job—to sort individuals, to identify talents and areas lacking strength. Given their purpose, "it would be surprising if the test were not the object of considerable hostility" (Gardner, 1984, p. 62). The better tests become in fulfilling their purpose, the more hostility they should engender; and indeed, IQ and ability testing have become inflammatory

topics (Bereiter, 1976–1977). It is considered elitist to favor IQ or ability testing, whereas those who oppose such testing view themselves as egalitarians. For example, intelligence tests, or indeed any other ability or achievement test, are often portrayed in the media as the all-purpose instrument of oppression, a way of depriving certain unfortunate individuals of what, through their own hard work, they have already earned (Bereiter, 1976–1977) and even supporting eugenic motives. Educators are now being told that all children are gifted but in different ways (Winner, 1996). Educating intellectually talented children is intertwined with IQ and ability testing in that they share a historical tradition. As a result, espousing an antigiftedness attitude is often seen as virtuous, as being synonymous with holding egalitarian views.

Yet IQ and ability testing was not designed to and do not serve to protect the elite (Bond, 1995). IQ breaks down, rather than preserves, class privileges (Gardner, 1984). For example, in the 1970s it was reported that between 50% and 60% of sons from parents in the professional–managerial class stay in that class as they mature (Bereiter, 1976–1977). Yet Jencks and colleagues (1972, p. 81) calculated that if admission to the professional–managerial class had been based entirely on IQ, which is the best single predictor of job performance (Ree & Earles, 1992; Schmidt & Hunter, 1992), only a third of the professional sons would have remained. Thus, two thirds would come from lower socioeconomic classes. To some this news may come as a surprise. Because IQ correlates positively with socioeconomic status, it is often forgotten that there are large numbers of gifted children in lower economic groups (Humphreys, 1985). As Abraham Lincoln remarked, "The Lord prefers common-looking people. That is the reason He made so many of them." Ability testing can open up opportunities for gifted children in lower economic groups, opportunities that might allow them to move into the professional–managerial class, rather than deny them such opportunities. "Even with their imperfections they (tests) are in important respects more fair than methods previously used" (Gardner, 1984, p. 64). Nonetheless, the message often communicated is that "the uses of tests have impeded rather than supported the pursuit of high and rigorous educational goals for all students" (Darling-Hammond, 1991, p. 222).

Ability testing was developed for educational purposes and is held in high regard by professionals in psychology (Snyderman & Rothman, 1987). Even by its critics, it is regarded as one of the single best predictors of academic success (H. Gardner, 1993; Sternberg, Wagner, Williams, & Horvath, 1995). Use of ability testing can identify both those who will experience learning problems in school and also those for whom much that is offered in school will be too easy. Nonetheless, at least partly because of legal challenges, many educators are extremely hesitant to administer aptitude and achievement tests and to use such test data to group students for instruction (see discussion later in this article). This results in students at both ends of the ability continuum receiving an education that is unresponsive to their learning needs.

Testing is critical for the appropriate placement of gifted students. Many do not appreciate this, perhaps because of ceiling effects in most testing instruments used with precocious students (Achter et al., 1996) and because schools tend to offer the generic "gifted program" or focus on general intelligence (IQ) rather than develop programs responsive to the different levels and types of giftedness. The

typical "gifted treatment," usually a 1- to 2-hour pull-out experience in the school week (i.e., the 10% solution for a 100% problem), cannot possibly meet the educational needs of all gifted students and can give the appearance of being superfluous; it sometimes is.

IQ scores among gifted students represent fully one third of the entire IQ range (i.e., from about 135 to beyond 200). Moreover, the top 3% in ability (all of whom are typically considered gifted) earn SAT scores in the seventh grade that range from chance to the top score possible (Benbow, 1988; Keating & Stanley, 1972). Stanley (in press) even found three 7-year-olds who scored 540, 580, and 670, respectively, on SAT-M, whereas the average college-bound 12th-grade male scored only 500! (All three 7-year-olds later proceeded brilliantly into top graduate schools in mathematics or physics, several years accelerated in grade placement.) These individual differences within the gifted range are meaningful in terms of educational outcomes and vocational expectations (Benbow, 1992b). Between ages 13 and 23, for example, the academic achievement of students in *the top quarter of the top 1%* greatly exceed that of the *bottom quarter of the top 1%* (Benbow, 1992a), with the average difference, across a multitude of variables, approximating 0.65 standard deviation. Moreover, those advanced in verbal compared to mathematical abilities excel in different domains (Benbow, 1995). Programs that do not respond to these individual differences in some way (e.g., some "enrichment" programs) are bound to be ineffective and hence may be inequitable. We believe it is appropriate for critics to point this out (e.g., Berliner & Biddle, 1995).

It does not matter "Whether individual differences in ability are innate or are due to environmental differences, we must deal with them imaginatively and constructively" (Gardner, 1984, p. 73). The policy implication is that, for optimal development to occur, the educational experiences provided to gifted students need to be differentiated according to the child's degree of giftedness and area of giftedness. A child extremely talented mathematically will require different educational programming than one with moderate talent in mathematics and different programming again compared to a child highly talented verbally. Fine-tuning the educational services provided requires using appropriate testing instruments to make accurate diagnoses. Popular bias against tests hinders accurate assessment and planning, and hence mitigates against using what research has shown to promote optimal learning. In the words of John Gardner (1984), "The good society is not one that ignores individual differences but one that deals with them wisely and humanely" (p. 92), and valid psychological testing can be of assistance.

Detracking

At this juncture in American education, the concept of homogeneously grouping students according to ability for instruction is unfashionable (Deutsch, 1993; Oakes, 1985, 1990; Slavin, 1987, 1995). Indeed, the detracking (anti-homogeneous grouping) movement has a firm grip on the educational system and is being fueled by charges that ability-grouping produces inequalities in student

opportunities and outcomes (Brewer, Rees, & Argys, 1995; Page & Keith, 1996). Jeannie Oakes, perhaps the movement's most visible advocate, claims that:

> During the past decade, research on tracking and ability-grouped class assignments has provided striking evidence that these practices have a negative impact on most children's school opportunities and outcomes. Moreover, the negative consequences of these practices disproportionately affect low-income, African-American and Latino children. (Oakes & Lipton, 1992, p. 448)

Darling-Hammond (1991) stated, "These curricular differences explain much of the disparity between the achievement of white and minority students and between the achievement of higher- and lower-income students" (p. 222).

Robert Slavin, another strong advocate of detracking, noted, "I am personally opposed to ability grouping, and, particularly in the absence of any evidence of positive effects for anyone, I believe that between-class ability-grouping should be greatly reduced" (Slavin, 1990b, p. 506).

In a later publication, Slavin contended,

> Ability grouping by its nature works against democratic and egalitarian norms, often creates racial or ethnic divisions, risks making terrible and long-lasting mistakes, and condemns many children to low-quality instruction and low-quality futures. If there were strong educational justification for ability grouping, the situation might be different. . . . Let's work toward schools that can do a better job with all of our children. (1995, p. 221)

The evidence to support these views is striking, however, only by its almost complete absence (Allan, 1991; Brewer, Rees, & Argys, 1995; Page & Keith, 1996; VanTassel-Baska, 1992). As Passow (1988) noted, the literature on the topic ranges "from scholarly reports of research findings to philosophical statement to emotional polemics" (p. 205). It is unfortunate that polemics dominate. In fact, the scholarly reports and meta-analyses of the grouping literature are strongly in support of the practice of homogeneous grouping (grouping for instruction according to demonstrated skill and/or ability; Allan, 1991; Feldhusen, 1989, 1991; Feldhusen & Moon, 1992; Kulik & Kulik, 1982, 1987, 1992; Page & Keith, 1996; Rogers, 1991). Indeed, there is "remarkably little support for detracking efforts" (Brewer, Rees, & Argys, 1995, p. 211). Moreover, some of the support that can be found attributes differential outcomes to instructional practices rather than the equally plausible alternative of differences in behaviors that students themselves bring to the learning setting that affect the nature of the instruction (Gamoran, Nystrand, Berends, & LePore, 1995). For example, the teachers have little or no control over the fact that students in higher level classes tend to complete more of their assignments than students in lower level classes.

The key work cited as supporting the need for detracking—with the argument that grouping harms some students—is Slavin's (1987, 1988, 1990a, 1990b) *best-evidence syntheses* (i.e., meta-analytic review of the literature). Yet these syntheses did not result in a conclusion that any students were harmed. Rather, Slavin's conclusion was that the results were sufficiently mixed as not to demonstrate any overall *positive* effects. Yet many have criticized Slavin's methods, assumptions, and conclusions (Allan, 1991; Brewer, Rees, & Argys, 1995; Gallagher, 1995; Gamoran, 1987; Hiebert, 1987; C. Kulik, 1985; J. Kulik,

1991; Kulik & Kulik, 1987; Nevi, 1987; Robinson, 1990; Walberg, 1988b). Perhaps the most critical objection is that Slavin studied grouping in isolation (i.e., no curricular modifications) and excluded gifted students from his analyses (e.g., Allan, 1991). Grouping was not intended for students within the average ranges of ability. Moreover, probably all would agree that grouping students without differentiating the curriculum is pointless (see Gallagher, 1995; Robinson, 1990). Yet, once the curriculum is differentiated, outcomes cannot be measured using the same metric. Students have had different experiences.

In the interest of equity, some would object to providing differing experiences within homogeneously grouped classes. It is assumed that

> If sophisticated math programs are good for students who are advanced in mathematics, then such programs must be good for all students, regardless of mathematical aptitude or interest. This is a prescription for mathematical mediocrity that does not materially improve the status of those low-track students whom such policies are supposedly designed to help. . . . Equity, here, does not consist of giving the same material to all students, regardless of aptitude or past performance; rather, it means giving each student what he or she most needs, and that would require differentiating the math curriculum to meet the differing needs of these students. (Gallagher, 1995, p. 217; also see Gardner, 1984)

Such a policy, some would contend, is still unfair because it results in the advanced students being taught by teachers with higher educational credentials (e.g., Brewer et al., 1995). Such charges seem to ignore the practical issue of who has the requisite knowledge to teach the advanced mathematics. As Gallagher (1995, p. 217) noted, "if you are going to conduct an advanced course in spherical trigonometry or geometry, it might be a good idea to have a teacher who knows something about the subject."

The literature on grouping and detracking is voluminous, however; and conducting an exhaustive review and analysis that gives justice to the topic goes beyond the scope of this article. Suffice it to say, we feel that Page and Keith (in press) captured the situation well when they drew the conclusion from their empirical study and analysis of the literature that homogeneous grouping improves the achievement of high ability youth, especially high-ability minority youth; is not harmful to low ability students' (or any group of students') achievement, aspirations, or self-perceptions; and is favored by classroom teachers. It is also favored by adults who were themselves identified as gifted when children. At age 33, these gifted adults are strongly opposed to abandoning homogeneous grouping in schools (Benbow, 1995). The data, we believe, strongly contradict Slavin's (1995) view that "there is little basis for the fear that [untracking programs] will be detrimental to the performance of high achievers" (p. 221). We believe it is detrimental.

Beyond research supporting its use, what is the rationale for ability-grouping? Ability and achievement grouping, rather than grouping by age, is effective because (a) it provides a better match between the developmental readiness and needs of a given student and the instruction he or she receives, and (b) students differing in ability respond differently to various educational strategies or teaching methods. Thus, the discussion should not revolve around whether to group for instruction. We do that already but use the wrong criterion—age. What should be of concern to educators is what is appropriate to teach and how, to what students,

and when. In this regard, it is important to keep in mind that intellectually advanced students benefit most from instruction that gives students considerable responsibility for organizing and interpreting information rather than from tightly structured lessons (Cronbach, 1989).

As an aside, homogeneous grouping for certain subjects, but not all, is also effective because it can provide a better social environment for children, at least for precocious children; they are with children for part of the day who are more like themselves academically (Lubinski & Benbow, 1995a). That is, participation in an ability-grouped program reduces deliberate underachievement among gifted students because they have less need to deny their abilities for peer acceptance. It also fosters greater self-acceptance because they can be with those who understand their needs, humor, and vocabulary and do not make fun of them. Although some would object, believing that gifted students might benefit but the low ability students would be left within a stigmatizing backwater environment, we question whether gifted students are truly the role models of such students in the first place (Schunk, 1987) and whether the tone they set is truly appreciated by other students. Nonetheless, heterogeneous grouping can be effective in some circumstances—for example, when the high-ability students act as explainers and the low-ability students ask questions (Webb, 1982a, 1982b). A problem would occur, however, if the highs and lows occupied only these roles in school, not only in terms of opportunity to learn but also in the labeling of students that may result. Also, the "children with the most advanced capabilities (who differ the most from the average) are the ones most likely to be marginalized in the heterogeneous classroom" (Yewchuk, 1995, p. 24).

Concern over the detracking movement is not confined to the gifted-child community. Within special education as well concern is being raised about detracking. A quote from Kauffman (1993) is illustrative:

> Some have suggested that where students with disabilities are taught is the variable largely responsible for our disappointment in what students learn and how they perceive themselves. This belief has sometimes been promulgated by those critical of teaching students in locations other than regular classrooms, who have argued that we now have the means to transform the mainstream of public education so that all students can be taught in the regular schools and classes. . . . Neither history of special education . . . nor the reviews of the effects of placement . . . suggest that the location of supports is the key to improvement of special education outcomes. Furthermore, recent empirical evidence does not indicate that we currently have effective and reliable strategies for improving and sustaining outcomes for all students in regular classrooms. (p. 8)

The policy implication, we feel, is clear. In the interest of the achievement of precocious students and, we believe, of other students as well, we need to halt or at least slow down the detracking movement in order to reflect and determine where it would be appropriate to apply and how. We need to continue homogeneous grouping of instruction in *certain* domains. Grouping boosts the achievement of the brightest students and perhaps even all students (Kulik & Kulik, 1982, 1992). As the National Education Commission on Time and Learning (1994, p. 31) concluded, grouping children by age should become a thing of the past. It makes no more sense to put a computer-literate second-grade student in Introduction to Computers at that grade level than it does to place a recent Hispanic immigrant in

Introductory Spanish. Both should be placed at their current levels of accomplishment.

Fads

Much of psychology and education is attracted to cyclic fadism (Cuban, 1990; Dunnette, 1966; Kauffman, 1993). Many educators become enamored with new methods of teaching. At times the attraction to fads is so strong that novel methods are applied without first evaluating their merits, ignoring the lessons of history (Cuban, 1990; Dunnette, 1966; Kauffman, 1993; Reschly & Sabers, 1974). Albert Shanker, President of the American Federation of Teachers, noted that "policy makers and reformers have gotten caught up in fadish and radical schemes for improving schools" (Pipho, 1995, p. 199). Moreover, as was noted in the *Prisoners of Time* report (National Education Commission on Time and Learning, 1994, p. 29): "Education reform has moved in fits and starts. Indeed as different helmsmen have seized the wheel, the ship of education reform has gone round in circles." Detracking, a problem so big in our view that it deserved its own section in this article, is an example of this cyclic fadism. A few other examples should amply illustrate the point. How many recall post-1957 "new math," where no one seemed to realize that not all people can think like mathematicians? Or PSSC physics? What about mastery learning or team teaching? Spiral curriculum? Twelve-month schools? Performance contracting? Mass instruction via television? What about constructivism, which is being promoted by researchers who "have ignored or dismissed a large body of relevant psychological research and theory" (Geary, 1995, p. 31), and performance-based assessment? Multiple intelligences? Then there is the Language Experience Approach to Reading, Whole Language Approach to Reading, mainstreaming, inclusion, progressive education, and open education? Now there is school reform. There are many fads and they are not all new. And it is truly unfortunate that many of these approaches are not well-supported by the research in psychology and education.

Language Experience Approach to Reading and Mainstreaming in the 1970s

These approaches were repackaged recently and called, respectively, *whole-language* and *inclusion.* The concept of a 12-month school first arose in 1924 in Trenton, New Jersey and, of course, much is currently being said about it (National Education Commission on Time and Learning, 1994). Those in the health professions have seen performance-based assessment methods come and go since at least 1910 (Swanson, Norman, & Linn, 1995), and many are voicing concern over whether it can possibly live up to its promises, even if it is a fairer form of assessment than traditional approaches (Bond, 1995; Guion, 1995). Yet most visible on the educational landscape today is school reform. School reform is also not new; it represents an idea that has been repackaged many times. School reform strikingly resembles open education of the 1960s. Open education, in turn, was a new version of progressive education of the 1930s (Cuban, 1990; Reschly & Sabers, 1974). Many aspects of open and progressive education failed and were abandoned. Reschly and Sabers (1974) warned educators involved with open education not to repeat the mistakes associated with progressive education lest they suffer the same fate. Their warnings went unheeded. It is not surprising that

open education came and went, just like its predecessor and just like many other educational innovations.

It is interesting to note that the current repackaging of open and progressive education, school reform, is receiving warnings (e.g., Kauffman, 1993) similar to those issued by Reschly and Sabers (1974) to the open education movement 20 years ago. (Even warnings against fadism seem to be cyclic!) Santayana (1905), Kauffman (1993), and Reschly and Sabers (1974) have warned, "Those who cannot remember the past are condemned to repeat it"—and we do.

To be clear, we do not see all of the current school reform as being bad. The National Council of Teachers of Mathematics (NCTM) standards and associated curricula reform, partly based on cognitive theory, are instances in which reform worked and has enlightened educational practice and programs with gifted students. What we and many others react to in the current reform movement is egalitarianism in its extreme form. We worry about those egalitarians (e.g., Oakes, Darling-Hammond, George, Slavin, Spady, Kohn, McIntosh, Willie,—see Sykes, 1995) who seem to deny that there are inequalities in capacity, eliminate situations in which such inequalities might exhibit themselves, and ensure that if such differences do emerge, they will not result in differences in status (Gardner, 1984, p. 36).

Indeed, school practice often moves ahead rather jerkily, more on the basis of enthusiasm and supposition than via basic and applied research (Kauffman, 1993; National Education Commission on Time and Learning, 1994). Much of it is full of politically motivated hyperbole, such as "U.S. students will be first in the world in science and mathematics achievement by the year 2000" (Goals 2000; U.S. Department of Education, 1991, p. 3). This can be seen as a useful tactic for administrators to employ. By creating a moving target, they are able to deflect criticism of present methods. Some educational reform might even be described as simply verbiage used to create a positive image. It is unfortunate that the image seems to be becoming more important than good ideas (Kauffman, 1993).

Moreover, innovations are promoted by engaging in a zero-sum activity (Cuban, 1990). Old ways of doing things are rejected or put down. It is as if a new approach can be found acceptable only if the previous approach is thoroughly debunked. For example, Howard Gardner (1993) promoted his theory of multiple intelligences by putting down psychometric approaches to intelligence rather than building on such work (see Lubinski & Benbow, 1995b, for a critique of Gardner). Smith-Maddox and Wheelock (1995) outlined some of the activities being promoted as part of school reform. These activities might strike one as quite desirable (e.g., encouraging students to take high-level classes, keeping options open). But why are they justified by attacking homogeneous grouping? Why are reforms and grouping looked at as mutually exclusive? The latter does not preclude the former. Coleman and Gallagher (1995), for example, clearly showed that, through careful planning, cooperative learning can be blended with middle-school ideas and with principles of gifted education. It is not the choice of one over the other. Psychology and education should be cumulative sciences.

Indeed, the negative approaches to promoting educational reform engender a "debate" that is clangorous and rancorous. It also puts the discussion into the hands of the polarizers, those who espouse the extremes of egalitarianism or individual achievement. This diverts energy and resources into battles with real or

imagined enemies rather than into solving problems (Raspberry, 1992). As Fred Hechinger (1983) noted, "There is no lack of generals who are calling for a campaign to improve schools. . . . What is lacking is an army of teachers to fight the battles for reforms (p. C5)." Hence, most of the problems remain even after "enemies" are vanquished.

There can, of course, be positive outcomes associated with educational innovations, some of which are soundly based and built on previous research findings. It is the exception that harms the reputation of educators. Yet even exceptions can have positive benefits. They can create enthusiasm among teachers, for example. Moreover, the novelty provides stimulation and a reprieve from encountering the rather routine, day-by-day subject matter. The associated benefits, however, are often negated by the confusion, resentment, the feeling of being overwhelmed by continually having to change tack, and even educational chaos that can be caused by a new procedure (e.g., New Math), especially if forced on teachers from above. (Forcing a teacher to adopt a new educational innovation may be akin to demanding that Cézanne paint like Rembrandt.) If the innovation persists long enough, the chaos and confusion are eventually brought under control, but by that time the novelty has worn off. This results in a lack of measurable effects. It is as if the positive effects of the novelty of an "educational innovation" are counterbalanced by the confusion associated with novelty, operating in a zero-sum manner in terms of progress.

Given all of these considerations and considering that innovations seem to come before the research evidence has been gathered, it is tempting to ponder what would happen if educators had the same strict guidelines imposed on them as, say, the Food and Drug Administration has for letting new medicines be put on the market. They would have to test educational innovations rigorously, often in double-blind experiments, for a substantial period of time (perhaps as long as 10 years) before the innovations could be certified for use with children. By then, proper strategies for implementation would have been worked out. In contrast, anyone can propose almost anything, and any gullible or desperate educator can try it out immediately with growing kids in the classroom—no need to pretest or even run carefully supervised trials ahead of time.

Fads affect the quality of education to which *all* children are exposed. Yet educational programs directed at gifted children are perhaps most greatly affected by the cyclic nature of education and its "reforms." Such children are prime examples of the influences of such reform. Educating gifted children is approached as if it were a fad or an unnecessary frill. Ad hoc provisions are made for them rather than systematic programs attendant to their learning needs (Tannenbaum, 1986). It is often not realized that many gifted children do not make it on their own (Benbow, 1991; Ford, Russo, & Harris, 1995; Harrington, Harrington, & Karns, 1991; National Education Commission on Time and Learning, 1994; Silverman, 1994). Some come from families that can provide what these children need in spite of their schools. Others are less fortunate. Some become drop-outs (Marland, 1972; National Commission on Excellence in Education, 1983), delinquents (Seeley & Mahoney, 1981), underachievers (National Commission on Excellence in Education, 1983; Rimm, 1987; Supplee, 1990; Whitmore, 1989), depressed, drug addicts (Engel, 1989), and victims of suicide (Delisle, 1990).

Moreover, commitment to gifted children cycles; progress accrued in one

cycle is dismantled in the next (Ford et al., 1995; Resnick & Goodman, 1994). The general trend appears to be that society suddenly realizes, because of a particular event (e.g., Sputnik—see Gallagher, 1988; Goodlad, 1964), that society's progress depends on gifted children. They are seen as the solution to what ails us. As a consequence, programs for gifted individuals are allowed to develop and even flourish for a while. Gifted students become a fad. Yet it does not take long for the pendulum to swing back. When educators have forgotten about the event that motivated them to invest in the education of gifted students in the first place and their concern for being taken over by an elite group reemerges (Gardner, 1961, 1984), the funding and support for gifted education starts to dissipate. Then the fad becomes antigiftedness. Gifted children tend to be either "in" or "out"; they are either embraced or spurned (Tannenbaum, 1979). They are alternately applauded, attacked, "mined" as a natural resource, and abandoned (Silverman, 1994), an outcome of the dual concern in our society to promote excellence and equality (Gardner, 1961, 1984), as was discussed previously.

After several years of progress in the late 1980s and early 1990s (with gifted students being "in") (Benbow, 1992b; Silverman, 1994), gifted children are on the "outs" again. Programs for gifted students are not politically correct now. It seems to be acceptable to attack gifted children and educators working on their behalf, accusing them, for example, of propagating views on the superiority of the White upper-classes and the inferiority of dark-skinned working-class people (Margolin, 1994). In a publicity leaflet for Margolin's (1994) book, for example, it is stated that,

> The author explains how gifted education is the obverse side of the "pedagogy of the oppressed," how it supports racism and classism, and singles out children of the affluent for training in social dominance. In exposing the role of gifted education in propagating inequality. . . . Margolin shows that . . . the gifted child curriculum has instead focused on articulating the prerogatives of the white upper class.

As a consequence of these attitudes, programs are being dismantled across the country (Benbow, 1992b; Winner, 1996), quickly becoming an endangered species (Silverman, 1994). The rhetoric against programs for gifted children condemns them as further privileges bestowed on the already privileged (e.g., Berliner & Biddle, 1995) or those who just perceive themselves to be gifted (Winner, 1996), rather than recognizing such programs as a necessary response to the needs of children who learn differently. Silverman (1994, pp. 1–2) wrote,

> The extent to which zeal has won over logic is nowhere more apparent than in a middle school in Gainesville, Florida, where all eighth graders learn algebra together, even if some haven't mastered addition and others are ready for calculus. The orchestrator of this plan has launched a vitriolic attack against parents of gifted children, deriding them for attempting to secure "special treatment" for their children (George, 1988). He gives advice to school personnel on how to handle these parents (dismissively, of course) (George, 1992). One can guess how such blatant bigotry would be addressed by the School Board and state legislator if it were aimed at parents of any other group with exceptional need. George (1992, pp. v.4) stated that "no school should tolerate organizational arrangements that build on or contribute to the belief that some students are better than others" and "all students [should be] deemed worthy and capable of learning everything the school has to offer." The implication is clear. If one child is ready and eager to read

> Shakespeare and another is not, it is "not fair" to allow that child to read Shakespeare, because that would deem those who are not ready as "unworthy." So, schools should no longer offer Shakespeare unless *every* student can grasp it?

That suggestion may appear far-fetched. Gross (1993), however, reported that a boy who earned an SAT-M score of 540 in the 4th grade (the average college-bound 12th-grade male earns a score of about 500) was forced to take fourth-grade mathematics with his classmates. The building principal had insisted that it would be "a violation of the principles of social justice" if this boy would be given material that could not be mastered by all the other 4th-grade students.

It is interesting in this regard that schools do not worry about making varsity football or basketball accessible to all students; they accept and tolerate that some students are much abler than others in this area, not worrying about principles of social justice. Surely, provisions for gifted children are as democratic as provisions for any other exceptional child. A gifted child is a child with special needs; he or she should have the right to learn new concepts in school every day (Silverman, 1994). The public seems (hesitatingly) to accept this, however, only when society and education are at the right point within the cycle.

As a result of the forces operating in our society, the level of services provided to gifted students in many schools today is not only inadequate, but becoming unacceptable. The trend is not to group them for instruction. Educators generally do not accelerate gifted students in subject-matter or grade-placement even though it is the practice yielding the largest achievement gains with no negative effect on social and emotional development (Benbow, 1991; Hobson, 1963; Kulik & Kulik, 1984, 1992; Rogers, 1991; Swiatek & Benbow, 1992). Most schools do not have *any* programs for gifted students, opting instead to "serve" them through the regular classroom. Yet regular classroom services provided to gifted students in schools with formal gifted programs are similar to those provided in schools without formal programs; only minor modifications in the classroom curriculum occur (Archambault et al., 1992, 1993). Hence, when gifted programs or homogeneous grouping are abolished, precocious students are hurt, in contrast to Slavin's (1995) claim to the contrary. George (1988, p. 23) has maintained that, "No group—nor individual student—should be expected to sacrifice an excellent education so that others might do better." In conclusion, American gifted students are appropriately served only sporadically—when they are the fad. When they are served, the program tends to represents the latest idea, not what educational and psychological research has shown to be effective. Few programs for gifted students are developed to be responsive to the wide range of individual differences at the high end of the ability continuum. Given this, coupled with the fact that gifted students receive, on average, no instructional or curricular differentiation in 84% of the instructional activities in which they participate (Westberg et al., 1992), is it surprising that the achievement of our most talented students falls short of similar students around the world?

Summary

We have outlined various reasons why the achievement gap between students in the United States and other countries, as documented by international comparison studies, is the largest for America's brightest students. The converging lines of evidence indicate that most of America's top students do not receive an

education that helps them develop optimally and, hence, remain competitive with students from other countries. We view this as being a result of the tensions between excellence and equity in American society, anti-intellectualism, the dumbing-down of the curriculum, reluctance to use ability testing and homogeneous grouping, and fads in education.

For optimal development or actualization of talent to occur, students must be provided with the opportunity to develop, seek out, and create an appropriate learning environment (Scarr, 1992; Scarr & McCartney, 1983). Indeed, talent development requires considerable cultivation and nourishment (Benbow, Lubinski, & Sanjani, in press; Bloom, 1985; Bouchard, Lykken, McGue, Tellegen, & Segal, 1990; Ericsson et al., 1993; Ericsson, Krampe, & Tesc-Romer, 1977; Feldman, 1986; Walberg, 1988a). Although some people may have greatness thrust on them, very few have excellence thrust on them (Gardner, 1984). They achieve it—not unwittingly, not by doing what comes naturally, not by luck—through hard work at learning.

We turn our attention next to how gifted students can be nurtured in a fair and cost-effective manner that is in the best interest of this nation.

How to Provide an Equitable Education to Precocious Students

There are multiple means for adjusting learning experiences to meet the educational needs of gifted students. They all fall into one of four categories: enrichment, acceleration, homogeneous grouping, or individualization. The most effective mechanisms, however, are acceleration and homogeneous grouping that involve differentiating the curriculum and adjusting methods of teaching (Kulik & Kulik, 1982, 1984, 1992). We have already discussed and advocated the use of homogeneous grouping. Here we focus on acceleration, which is at the heart of the model developed and promoted by our Study of Mathematically Precocious Youth (SMPY)[2] and special high schools and early-college-entrance programs for gifted students (an example of acceleration and homogeneous grouping).

Acceleration

Use of educational acceleration provides instruction that is homogeneously grouped on the basis of ability. It is homogeneous grouping without regard to age. Acceleration, alone or in combination with other enriching educational programs (e.g., Benbow, 1991; Stanley & Benbow, 1982) but especially in conjunction with curriculum differentiation, is a best practice for serving the academic needs of gifted students (Benbow, 1991; Boatman, Davis, & Benbow, 1995). It is an educational option that is perhaps most strongly supported by empirical research (Benbow, 1991), that is included in a governmental list of "what works" (U.S. Department of Education, 1986), endorsed by the National Education Commission on Time and Learning (1994), and by members of the reform movement (Berliner & Biddle, 1995; Slavin, 1990a, 1990b). Because acceleration is so reluctantly used

[2]The SMPY model involves using acceleration to meet the academic needs of precocious children as determined through comprehensive and diagnostic testing. The interventions provided respond to individual needs to ensure that the education received is commensurate with individual capabilities.

by parents and educators, we provide a rationale for its use. (Much of it also applies to homogeneous grouping, of course.)

First, acceleration, which is much more than simply grade skipping (see the discussion that follows and Southern, Jones, & Stanley, 1993), can by no means be realistically described as elitist. It cannot be argued that accelerated students receive services or participate in opportunities that would be beneficial to all students. Accelerated students are simply given access to certain curricula at ages younger than typical, at an age that more closely coincides with when they are ready for it. Time is "adjusted to meet the individual needs of learners, rather than the administrative convenience of adults" (National Education Commission on Time and Learning, 1994, p. 31). Acceleration is also cost-effective, actually saving school dollars (VanTassel-Baska, 1989). Moreover, acceleration is an optimal method for serving gifted students in rural or sparsely populated areas (e.g., Benbow, Argo, & Glass, 1992; Howley, 1989; Southern & Jones, 1992). It is ironic, however, that it is least likely to be used in those settings (Southern & Jones, 1992). Further, acceleration may help talented individuals complete their education sooner and at a higher level. It may, therefore, add productive years to their professional lives or afford them the opportunity to pursue several interests. It allows gifted students to cut short the time they are dependent on society (i.e., throughout their schooling years). Most important, however, acceleration rescues gifted students from the boredom of insufficient challenges (Berliner & Biddle, 1995; Kulik & Kulik, 1984; Stanley, 1977). These are only some of the many practical benefits of acceleration.

A more theoretically based justification for acceleration also can be provided. Acceleration is an educational practice consistent with theories of learning and achievement motivation (Benbow, 1991). Learning is optimized, as is growth in achievement motivation, when the individual is presented with tasks that match or slightly exceed capabilities (Dweck & Elliott, 1983; Harter, 1981; Heckhausen, 1982; Hunt, 1961; Robinson, 1983; Wallach, 1978). This is analogous to individual readiness, which embodies three basic principles from educational psychology: working from the simple to the complex, working from the known to the unknown, and starting each lesson near each student's current level of achievement (Page & Keith, in press). As Bloom and Sosniak (1981) argued, talent development proceeds at an individual rate from practice to mastery of increasingly more difficult and complex skills. Acceleration ensures that the precocious student is presented with the sufficiently difficult and complex tasks needed to maintain this development. Some might argue that, although acceleration may enhance the achievement motivation of gifted children, it may decrease the achievement motivation of their age mates who become deprived of a role model when the gifted child is removed from the classroom. This is a mistaken belief, even if students can work well in heterogeneous groups when they take the role as explainers (Webb, 1982a, 1982b). Gifted students are not the role models of typical students. We model on individuals perceived to be similar to ourselves, not those who demonstrate flawless performance (Bandura, 1986; Schunk, 1987). Thus, one could even argue that removal of gifted pupils from the regular classroom might enhance achievement motivation of other students by increasing their sense of self-efficacy (Allan, 1991; Fiedler, Lange, & Winebrenner, 1993; Kulik & Kulik, 1982).

Although it is beyond the scope of this article, Benbow (1991) reviewed some of the research in cognitive psychology that would be consistent with the idea that acceleration has the potential to enhance creativity, achievement, and higher-order thinking skills. Benbow (1991) also noted that acceleration can be justified on social and emotional grounds, because gifted students tend to be socially mature and prefer older friends. As a matter of fact, Gross (1993) has found that acceleration enhances self-esteem of accelerated children. David Elkind (1988), the author of *The Hurried Child,* endorsed acceleration because it is consistent with his notions of developmental placement. Elkind stated,

> Promotion of intellectually gifted children is simply another way of attempting to match the curriculum to the child's abilities, not to accelerate those abilities. Accordingly, the promotion of intellectually gifted children in no way contradicts the accepted view of the limits of training on development, nor the negative effects of hurrying. Indeed, the positive effects of promoting intellectually gifted children provide additional evidence for the benefits of developmentally appropriate curricula. (1988, p. 2)

Finally, acceleration of gifted students is also consistent with the Theory of Work Adjustment (Dawis & Lofquist, 1984; Lofquist & Dawis, 1969, 1991), a prominent theory of vocational adjustment that has been extended to educational adjustment (Benbow & Lubinski, 1994; Lubinski & Benbow, 1995a).

Acceleration, therefore, can be justified on theoretical, practical, and empirical grounds. Yet the degree to which it is used in schools does not reflect the degree of empirical support in place for this practice. This may be a result in part of the fact that *acceleration* is really a misnomer. Acceleration of talented students is not pushing the child along but responding to an existing advancement. It is simply deciding that competence rather than age should be the determining factor for when an individual obtains access to particular curricula or experiences. This is precisely what we do in the arts and athletics. Why not academics? Moreover, acceleration is not meant to be used in isolation. The goal is to develop a combination of accelerative options, enrichment, and out-of-school opportunities (already available resources) that reflects the best possible alternative for educating a specific child and, thereby, enhances educational adjustment. This approach has been labeled *curricular flexibility* (Benbow & Stanley, 1983) and reflects the proper psychology of talent. Wallach (1978, p. 617) argued, "the proper psychology of talent is one that tries to be reasonably specific in defining competencies as manifested in the world, with instruction aimed at developing the very competencies so defined."

Of what does acceleration or curricular flexibility consist? It includes early admittance to school (Proctor, Feldhusen, & Black, 1988), grade skipping (Feldhusen, Proctor, & Black, 1986), entering college early with or without a high school diploma (most high schools will award a high school diploma after completion of 1 year of college; Brody & Stanley, 1991; Eisenberg & George, 1979; Janos, Robinson, & Lunneborg, 1989; Robinson & Janos, 1986; Stanley & Benbow, 1983), entering a college early-entrance program such as those at Simon's Rock College or the Texas Academy of Mathematics and Science (Stanley, 1991), the International Baccalaureate (see description in Cox, Daniels, & Boston, 1986), taking a course (e.g., Algebra 1) 1 or more years earlier than typical (Kolitch & Brody, 1992), taking college courses on a part-time basis while

still in secondary school (Solano & George, 1976), taking special fast-paced classes during the summer or academic year (Bartkovich & George, 1980; Durden, 1980; Lynch, 1992; Stanley & Stanley, 1986; Swiatek & Benbow, 1991b; VanTassel-Baska, 1983), completing 2 years of a subject in 1 year, compressing curricula, taking Advanced Placement Program (AP) courses and examinations (AP courses are college-level courses taught in high school but may garner college credit for the student if final exam scores are sufficiently high; Zak, Benbow, & Stanley, 1983), individual tutoring in advanced subject matter (Stanley, 1979), participating in competitions such as the Mathematical Olympiads for Elementary Schools, MathCounts (for seventh- and eighth-grade students), the American High School Mathematics Examination, the Westinghouse Science Talent Search, and the Putnam (college mathematics) Competition (such competitions enable high-potential students to interact directly and indirectly with their true intellectual peers while working with advanced subject matter), earning a master's degree simultaneously with a bachelor's degree, and joint MD/PhD programs. Acceleration essentially consists of using with younger gifted students already available resources, curricula, or programs designed for older students (Benbow & Stanley, 1983). It is a practice consistent with basic research findings revealing that gifted students are primarily precocious or developmentally advanced (Dark & Benbow, 1990, 1991, & 1994; Elkind, 1988) and that this applies to their socioaffective as well as cognitive development (Janos & Robinson, 1985; Lehman & Erdwins, 1981; Robinson & Noble, 1991).

We noted earlier that educators in the United States are far too eager to adopt new practices and procedures without carefully examining their research base. The strength of our model of talent development, the SMPY model (Benbow, 1986; Stanley, 1977), is that it is research-based. There is a wealth of evidence to support its adoption. Much of this research comes from SMPY itself. SMPY is conducting a 50-year longitudinal study, involving 6,000 intellectually gifted individuals identified over 20 years and grouped into five cohorts (Lubinski & Benbow, 1994). Through this study we are working toward developing a comprehensive and refined understanding of the processes whereby precocious forms of intellectual talent develop into noteworthy forms of adult achievement and creative accomplishment. How various educational interventions or opportunities, such as acceleration, facilitate the development of potential into actual achievement and creativity is a question of special importance to our research.

Although multiple studies have been conducted on the variety of acceleration options that SMPY has promoted with its participants (see Benbow, 1991, for a review), we can summarize the results: When differences are found, they tend to favor the accelerates over the nonaccelerates, regardless of the mode of acceleration (e.g., Swiatek & Benbow, 1991a, 1991b), even 50 years later (Cronbach, 1996). In addition, most students are satisfied with their acceleration in both the short- and long-term (Richardson & Benbow, 1990; Swiatek & Benbow, 1992). This is consistent with the hundreds of studies in the scientific literature documenting this effect. It is not surprising that not a single study has been reported that shows acceleration to produce long-term damage to gifted students. To the contrary, most accelerated gifted students thrive, and those students who are not accelerated tend to exhibit lower achievement, have more behavior problems, feel less comfortable in school, and have poorer attitudes (Benbow, 1991).

Special High Schools

Over the years, special schools to nurture highly able high school students properly have been created and deserve to be highlighted. Perhaps the best known of these are the Bronx High School of Science, Stuyvesant High School, and the Hunter College School for the Gifted. All three are located in the New York City area, are municipally supported, and are nonresidential. More recently, in Fairfax County, Virginia, there is the highly selective Thomas Jefferson High School for Science and Technology, publicly financed and nonresidential.

Starting in 1980, a new type of special school began to appear. The first was the North Carolina School of Science and Mathematics (NCSSM), located in Durham. Selective, residential, and state-supported, it consists of 11th and 12th grades. It has been quite successful in helping bright boys and girls live up to their academic potential (Eilber, 1987). The NCSSM model was adopted in Louisiana, Illinois (Grades 10 to 12), Indiana, Alabama, Oklahoma, South Carolina, Mississippi, Arkansas, Georgia, Maine, and perhaps several other states. It eventually may be replicated in perhaps half of the states in the nation—with a number of variations, of course (Stanley, 1987).

There is another tradition, stemming from the University of Chicago before World War II. It is early entrance to college, either without yet having earned a high school diploma or by being a young high school graduate. When the support for such a program flagged at the University of Chicago, little Shimer College at Mt. Carroll, Illinois (now at Wankegan, Illinois), founded in 1853, tried during the 1960s to fill the gap. In 1964 Simon's Rock Early-Entrance College of Bard College was created in Massachusetts solely to admit students a year or two shy of completing high school requirements. It has succeeded and has been followed by the Program for the Exceptionally Gifted of Mary Baldwin College (women only) in Staunton, Virginia (Stanley, 1995a), and the 1-year Clarkson School of Clarkson University (Kelly, 1989) in Potsdam, New York. Nowadays, many colleges will admit students a year or two, or even more, younger than their typical first-year students (Brody & Stanley, 1991; Charlton, Marolf, & Stanley, 1994; Southern et al., 1993). Some do not require high school graduation.[3]

In 1988 the state-supported University of North Texas in Denton created a major new variant of early-entrance programs, the state-chartered Texas Academy of Mathematics and Science (TAMS; Stanley, 1991). About 200 highly selected boys and girls enter it after the tenth grade. They must reside in their own special residence hall on campus, have some restrictions because of their age, and take the most rigorous required set of college courses of perhaps any high school in the nation: two semesters each of biology, calculus, chemistry, and calculus-prerequisite physics and eight semesters of social science and humanities. To earn a TAMS (i.e., high school) diploma, they must complete *all* of these and several electives with a cumulative grade-point average of not less than 2.5. Then they may remain at the University of North Texas to complete their Bachelor's degree or transfer elsewhere as college juniors.

In the fall of 1995, the State University of West Georgia in Carrollton

[3]Johns Hopkins University's youngest graduate ever, a high school graduate, was 15 years 7 months old in 1981 when he received the Bachelor's degree in physics with general and departmental honors and the physics prize (Stanley & Benbow, 1983). He is now a highly productive researcher.

began a more flexible, residential, early-entrance program (Stanley, 1995b). Students from anywhere enter after the 10th or 11th grade and complete the graduation requirements of their own high school in absentia solely via college courses.

The three types of programs (special nonresidential high schools, residential state high schools, and early-entrance college plans) appeal to somewhat different groups of talented youth. In our opinion, all are needed in order to provide the range of special educational opportunities those boys and girls sorely need and (we believe) richly deserve for their own educational and personal advancement and the good of the country. These plans, along with AP classes in high schools, seem to us to constitute some of the best possible "homogeneous grouping" and acceleration to raise the low academic ceiling of most regular high school curricula.

Conclusion

By drawing on several lines of converging evidence, we have demonstrated that the achievement of America's brightest students has declined over the past three decades, lagging even further behind their counterparts in other nations. They are less well prepared academically today than they were a generation ago. Some feel that they are better at identifying how they feel about problems but not better at thinking about problems (Singal, 1991). Yet it is on the thinking about problems and arriving at solutions that societal progress is dependent. Individuals who can apply scientific ingenuity to alleviate human suffering and solve social problems are needed. Such persons are not just born. True, they are individuals born with strong propensities to learn and to develop intellectually at a high level; but they must also be nurtured and provided the educational opportunities required to develop optimally. Despite the importance of such opportunities, schools infrequently provide them. Most schools at best make slight *provisions* for gifted students; few provide well-formulated *programs*. Why?

The lack of attention or caring for America's brightest students is a result in large part to extreme egalitarianism, which presents itself in the form of six forces operating within American society and hence its schools: the pitting of equity against excellence rather than promoting both equity *and* excellence; anti-intellectualism; the dumbing-down of the curriculum; equating aptitude and achievement testing with elitism and avoiding their use; the attraction to fads; and the insistence of educators to teach all students from the same curriculum at the same level. These forces have led to a situation in which the precocious students are not being treated equitably; they simply are not provided with an appropriate education—an education that brings out their potential. This hurts bright students from minority or lower socioeconomic backgrounds the most, because their parents often cannot provide alternative educational experiences to compensate for their neglect by the system.

We have provided recommendations for creating positive change and hence a restoration of educational equity and a better balance between equity and excellence. The first recommendation involves underscoring the necessity of incorporating well-supported findings from psychology and education when developing educational policy (Cuban, 1990). Research repeatedly has shown that a one-size-fits-all mentality does not work; we need to be responsive to individual

differences (Benbow & Lubinski, 1994). This is a principle derived from empirical research findings and consistent with social philosophy. Karl Marx said, "From each according to his abilities, to each according to his needs."

With respect to intellectually advanced students, this involves the adoption of accelerative strategies by schools, reaffirming the importance of homogeneous grouping (not tracking) for instruction, and use of special high schools that embody the former two approaches. Acceleration and homogeneous grouping are the most effective known educational interventions on behalf of talented students. [Grouping is different from tracking (cf. Feldhusen & Moon, 1992)]. Neither has been empirically shown to harm any group of students; the evidence, indeed, is to the contrary. We believe that the evidence in support of acceleration and grouping (with a differentiated curriculum) for meeting the academic and socioaffective needs of intellectually precocious students is so compelling that it is simply malpractice for schools not to use these procedures appropriately.

One might assume that lack of financial resources prevents schools from meeting the academic needs of high-potential children. Yet acceleration costs little if anything to adopt. It might actually save money. The principal requirement is administrative and curricular flexibility. If an effective medical treatment were withheld under such circumstances, we would be morally outraged. We ought to respond similarly when opportunities are withheld that prevent optimal psychological and intellectual development of a group of individuals. If we want talented individuals to be well prepared when society needs them, we need to be there for them when they need us. That is the mark of a humane, responsible, effective society.

The wisdom of John Gardner (1984) brings us to conclusion:

> Extreme equalitarianism, or, as I would prefer to say, equalitarianism wrongly conceived—which ignores differences in native capacity and achievement and eliminates incentives to individual performance—has not served democracy well. Carried far enough, it means the end of that striving for excellence that has produced history's greatest achievements. (p. 30)

"Let us take the discussion out of the hands of polarizers and build an educational system that serves each in terms of his or her talents, stretching each, challenging each, demanding of all the best that is in them." (p. 94)

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