

Intelligence and College

Charles Murray

IMAGINE A HIGH-SCHOOL SENIOR who is trying to decide whether to go to college. He walks into the office of his school's counselor and asks for help in making up his mind. The counselor knows that this student's grades are Bs and Cs, and that his motivation and industriousness are fine, but nothing special. He is considering some college majors that sound interesting to him, but he does not have a passion for any of them. In fact, as the counselor talks to the student, she discovers that what he really enjoys is working with his hands. The idea of sitting in an office does not appeal to him. But his parents have their hearts set on their son's getting a college degree, and most of his friends will be going to college next fall.

What information should the counselor give to the student to help him decide? We know what she is likely to say: A survey of high-school students revealed that more than 90% of them were encouraged by their high-school counselors to go to college. But what does this student really need to know?

Above all, he needs to know whether he can expect to do well in college if he puts in a serious, good-faith effort. And to know that, the student needs to understand the relationship between his level of intellectual ability and the demands of college courses in the majors he wants to declare. The counselor is not likely to give that information to him; she is unlikely even to possess it. Hardly any high-school counselor has such information, because publicizing blunt facts about the relationship of intelligence to success in college has been out of bounds for decades. In an age when everyone from parents to presidents urges every child to go to college, a simple truth is almost universally ignored: Only a small minority of high-school graduates have the intelligence to succeed in

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college. The refusal to confront the relationship between intelligence and success in college has produced a cascade of harms—to many students who try to go to college, to those who do not, to the system of higher education, and to the nation as a whole.

ACADEMIC ABILITY AND ACADEMIC SUCCESS

For 40 years, American leaders have been unwilling to discuss the underlying differences in academic ability that children bring to the classroom. Over the same period, federal policy, backed by billions of taxpayer dollars in loans and grants, has aggressively encouraged more and more students to try to obtain a college education. As a result, about half of all high-school graduates now enroll in four-year colleges, despite the ample evidence that just a small minority of American students—about 10-15%—have the academic ability to do well in college.

At first, that proposition seems false on its face. After all, more than a quarter of American adults have successfully obtained a bachelor's degree (hereafter "B.A."). But the point is not that only a small minority of young people can survive for four years and get a degree in today's colleges; rather, that only a small minority of them can *do well*. For everyone else, there ought to be better options than spending four years scraping by—at best.

To make that case, it helps to put aside that inflammatory word *intelligence* and substitute the term *academic ability*. It's mostly a matter of changing labels, not meaning. Academic ability refers primarily to two of Howard Gardner's famous multiple intelligences: linguistic intelligence and logical-mathematical intelligence. These two, along with some aspects of what Gardner calls spatial intelligence, are what IQ tests measure as part of their larger effort to determine *g*, the general mental factor. Academic ability is also well measured by the SAT, ACT, and other tests that bill themselves as indicators of academic preparation for college.

But labels can make a difference. Using *academic ability* instead of *intelligence* emphasizes that the argument does not depend on the heritability of cognitive ability, the relationship of test scores to socioeconomic status, the malleability of mental capacity in toddlers, or the reality of *g*. Instead, I work from the simple and easily demonstrable proposition that what you see in the academic ability of high-school seniors is what you get. Interests can still change at that age, and so can

motivation. Such changes can have dramatic effects on academic performance. But the underlying level of academic ability is fixed long before the end of high school.

So how much academic ability is required to do well in college? We can begin by looking at what it takes to graduate from college. In 1972, the standard textbook for the Wechsler Adult Intelligence Scale concluded that “a good working rule of thumb” for the mean IQ of college graduates was about 115, which cuts off the 84th percentile. This was just an estimate based on the author’s clinical experience and consistent with the research literature on college students of the 1950s and 1960s. But we have two excellent sources for checking that estimate more precisely: members of the 1979 and 1997 cohorts of the National Longitudinal Survey of Youth (NLSY), who were given a psychometrically sound measure of academic ability, the Armed Forces Qualification Test (AFQT), at baseline. I have limited the samples to those who took the test in their high-school years so that the measure of academic ability is uncontaminated by any college-level instruction (or lack of it). I also limit the sample to non-Latino whites (hereafter just “whites”), to sidestep complex issues about differential treatment of whites and minorities in colleges (issues that are extraneous to my argument).

The members of the 1979 cohort who qualified for the analysis were in their college years from 1980 to 1986. Expressed in the IQ metric, the white youths who eventually got a bachelor’s degree during that era had mean AFQT scores of 115.0. The members of the 1997 cohort were in their college years from 1998 to 2006, and the mean AFQT of the white youths who had gotten a B.A. as of 2006 was 114.1. That “good working rule of thumb” offered in 1972 still seems to be very good indeed.

About half of the white college graduates had scores lower than 115. In the 1997 cohort of the NLSY, for example, a quarter of the B.A.s were acquired by white youths with AFQT scores under 107, and 10% went to youths with scores under 100. So if getting a degree constitutes our definition of “doing well,” then the proportion of whites who can do well is much larger than 10-15%. On the other hand, anyone who has taught a college class (unless he has spent his career at a highly selective school) knows that large numbers of students who manage to get a B.A. do not do well in the classroom. They get by—showing in their classroom participation that they do not understand much of the material, writing barely literate term papers, and turning in essays on the final exam that

aren't quite bad enough to flunk. These students aren't necessarily lazy; they just aren't very good at the kinds of things that constitute competence in college courses. Just getting a B.A. is far too loose a standard for "doing well."

A better definition may be drawn from Jennifer Kobrin's 2007 analysis of college readiness. In line with others' definitions, Kobrin, a researcher for the College Board, defined college readiness as a 65% chance of getting a 2.7 grade point average in the freshman year of college. She used a sample of 165,781 freshmen of all ethnicities with SAT scores and freshman grade point averages who had attended 41 different colleges, ranging from unselective state universities to elite schools. The question she put to her data was this: What is the minimum SAT score—the benchmark score—that is statistically associated with that 65% probability of at least a 2.7 grade point average?

It doesn't sound like a demanding standard—a B-minus average in an age of grade inflation, with no limitations on the courses that qualify. But demanding or not, the benchmark score for reaching that standard was 1180 for the combined SAT-Verbal and SAT-Math. Was the benchmark inflated by tougher grading in the most selective colleges? No, the difference between the benchmarks of the unselective institutions and highly selective ones was only 23 points. Was it inflated because many small private colleges were part of the sample? No, the benchmark was *lower* for small private colleges than for large state universities.

How many of America's 18-year-olds could get a combined SAT score of 1180 or higher if everybody took the SAT? In my 2008 book *Real Education*, I used three independent methods of calculating the answer to that question: estimating the distribution of scores of the 18-year-olds who do not take the SAT; using the College Board's Norm Studies that employed nationally representative samples; and using the work of Meredith Frey and Douglas Detterman, who compared SAT scores and AFQT scores in the 1979 cohort of the NLSY. The three methods each produced a narrow range of plausible answers: Somewhere between 9 and 12% of the 18-year-old American population could get a score of 1180 or higher, with a realistic best guess of about 10%.

There is no inconsistency between Kobrin's results and a 115 mean IQ among white college graduates. The students who make salient points in classroom discussions, who write well-researched term papers, and whose final exams demonstrate that they understood the material are

usually well into the upper half of the distribution of academic ability among those who go to college. In other words, they are somewhere in the top 15% of the population — and usually in the top 10%.

This conclusion is easy to accept when it comes to majors in mathematics and the hard sciences. No one can do well in those majors unless he can handle the math, and “handling the math” usually means being able to pass courses in advanced calculus and statistics. Most people are willing to concede from their own experience with mathematics that only a small percentage of people are competent in advanced math, and 10% does not sound out of line. Yet courses in the humanities and non-quantitative social science would appear to have no equivalently obvious intellectual barrier to entry; all you have to be able to do is read and comprehend. But in college, what you have to read is often not easy. In *Real Education*, I used quotations drawn from page 400 (a randomizing choice) of several college textbooks to remind my readers what college-level reading is like. Here is one from page 400 of *The Western Heritage* (1983) by Donald Kagan, Steven Ozment, and Frank Turner:

The Protestant Reformation could not have occurred without the monumental crises of the medieval church during the ‘exile’ in Avignon, the Great Schism, the conciliar period, and the Renaissance papacy. For increasing numbers of people the medieval church had ceased also to provide a viable religious piety. There was a crisis in the traditional teaching and spiritual practice of the church among its many intellectuals and laity. Between the secular pretensions of the papacy and the dry teaching of Scholastic theologians, laity and clerics alike began to seek a more heartfelt, idealistic, and — often in the eyes of the pope — increasingly heretical religious piety.

If you think that more than 10% of American 18-year-olds could follow the thread of that paragraph — even if you explained what *Reformation*, *Great Schism*, and *Renaissance* meant — you should go to the National Center for Education Statistics website. It posts sample questions from the 12th-grade reading test of the National Assessment of Educational Progress, along with the percentages of students getting them right. The numbers are sobering, as are the overall results: Just 5% of 12th graders reach the “advanced” level on the National Assessment’s reading

test—and “advanced” is what that passage from *The Western Heritage* requires.

Succeeding in social-science and humanities courses taught at a genuine college level demands a lot more than just basic literacy and motivation. Add in the rigors of courses in the hard sciences, and that estimate of 10-15% who can do well in college seems not just plausible but generous.

THE COSTS OF FAILURE

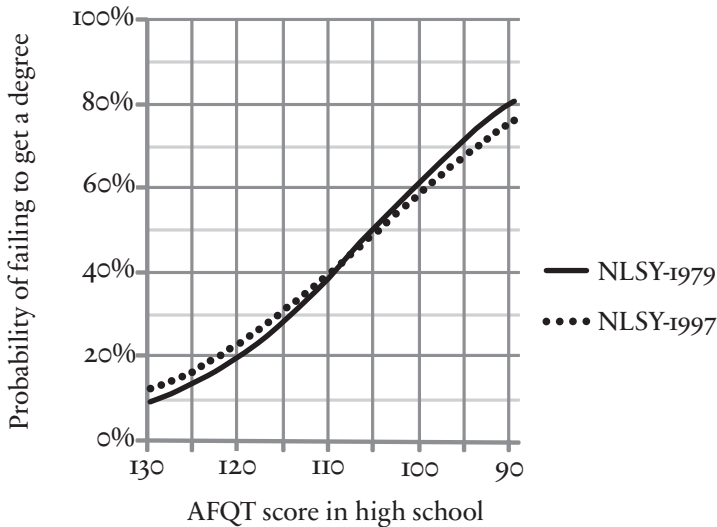
If trying for a college degree were cost-free, and if students were unaffected by failure, these numbers would still justify some version of an “everybody should go to college” position. If people with average academic ability can sometimes get a B.A., why not encourage everyone to attempt it? But trying for a B.A. exacts high costs in both time and money, often burdening students with large loans as they start out in life. And teenagers bleed if they are pricked. Encouraging young people who can succeed if they try hard to strive for college is one thing, but setting young people up for failure is another.

The advocates of college for everyone seldom mention those who try and fail, but in fact the college dropout rate is extremely high. In a longitudinal study sponsored by the Department of Education, 42% of those who entered college in 1995 had not obtained a degree within six years. That is almost exactly the same as the 41% of white youths in the 1979 NLSY cohort who dropped out of four-year colleges and never got a B.A. For whites in the 1997 cohort who were at least 24 years old in the 2006 survey, 39% of those who had entered a four-year college had not yet obtained a degree.

The mean AFQT scores of the dropouts in the 1979 and 1997 cohorts were 104 and 103 respectively, compared to the 115 and 114 of those who graduated. Lower academic ability in high school was strongly associated with increased likelihood of failure. A statistical analysis lets us be more precise; the figure on the following page shows the probability that a person with a given AFQT score who enrolled in a four-year college dropped out before getting a degree.

The results from the two cohorts, born 20 years apart, are remarkably similar. They will become virtually identical as those in the 1997 cohort who were still enrolled in college as of 2006 either give up (disproportionately those at the low end of ability) or get their degrees (disproportionately those at the high end of academic ability).

MEASURED ACADEMIC ABILITY IN HIGH SCHOOL AND THE PROBABILITY
OF DROPPING OUT OF COLLEGE AMONG WHITE STUDENTS



Note that the analysis is based only on those who had the motivation to enter a four-year college in the first place. If the graph were based on everybody, the probability of failing to get a degree would be far higher for those at the lower levels of academic ability. But even when restricted to the self-selected group who try for college, the crossover point at which a student had a 50-50 chance of getting a B.A. was an AFQT score of about 105 in both cohorts.

Now put the information in that graph together with these facts about who tries to go to college: About 17 out of every 20 white high-school seniors at the 90th percentile of academic ability enter a four-year college hoping to get a B.A. Twenty percent of them can be expected to fail. About two out of three white high-school seniors at the 75th percentile of academic ability enter a four-year college hoping to get a B.A. Forty percent of them can be expected to fail. About half of white high-school seniors at the 60th percentile of academic ability enter a four-year college hoping to get a B.A. Fifty-two percent of them can be expected to fail. About two out of five white high-school seniors at the 50th percentile of academic ability enter a four-year college hoping to get a B.A. Sixty percent of them can be expected to fail.

The reality behind these numbers is even more depressing. Those

among the academically talented who do not get a degree are likely to be voluntary “failures” — students who easily could have gotten the B.A., but behaved in ways that prevented them from doing so (spending too much time partying or running the student newspaper or, as in the case of Bill Gates and Steve Jobs, deciding they wanted to do something else). But the lower we go down the ladder of academic ability, the higher the probability that the failure was genuine: an inability to cope with college-level material, combined with the discouragement and loss of self-confidence that accompany any endeavor in which we try hard and just can’t do it.

THE COUNSELOR’S CONUNDRUM

Let us return to the guidance counselor as she considers what to tell the uncertain high-school senior. Leafing through his folder, she finds a record of his score on an IQ test the school administered when he was in eighth grade. It is 105, a number consistent with his performance in high school. So now she has something specific she can tell him: For the last 30 years, white students with AFQT scores of 105 (roughly equivalent to IQs of 105) who have gone to college have had only a 50-50 chance of getting a B.A. If the student takes an undemanding major, he can improve his odds. And if he works really hard — much harder than most students do — he can improve his odds. But if he is interested in a difficult major, the odds go down. Taking any major that requires serious mathematics drives the odds close to zero.

Another reality is that, on average, dropouts spend about two years in college, incurring the high costs that involves, before they leave. The fact that they dropped out probably meant that they were not getting much out of their courses and had not enjoyed their classroom experiences. The high-school student should know these things, too, before he decides to take the plunge.

But the counselor must also talk to the student about two other realities. First, having a B.A. will probably increase the student’s future income substantially. Judging from the 1979 NLSY cohort, someone with this student’s academic ability will, in his early 40s, be making about \$29,000 more per year if he gets a B.A. than if he doesn’t. That is an extremely large incentive to get the degree. Second, less concretely but just as real, the B.A. has become a social gatekeeper. Having a B.A. does not confer much prestige any more unless it comes from an elite

school, but *not* having a B.A. is a badge of second-class social status unless one is in the Bill Gates/Steve Jobs category. To be “just a high-school graduate” sounds very bad these days, and it doesn’t sound much better to say you have an associate’s degree from a community college.

After the counselor has given all this information to the student, the young man says to her, “What do you think I should do?” It is a daunting question. What is in fact in his best long-term interests—both for maximizing his chances of financial success, and for finding him a satisfying vocation?

The counselor has no good answer, because the options available to her are inadequate. The student should certainly get more education after high school. There are courses taught on college campuses that could benefit him. But four years? A B.A.? Why should he have to commit to the B.A. to get what he needs? The purpose of college has evolved, but the measure of success in college—the bachelor’s degree—has not. Therein lies the source of the counselor’s conundrum: Enormous economic and social value comes from a nearly meaningless piece of paper.

It is nearly meaningless because, except for a handful of majors in the hard sciences, a B.A. tells an employer next to nothing about what the degree-holder has learned. The requirements for majors are usually so loose, and the availability of soft courses so great, that an employer has to scrutinize the transcript course by course to have any idea of what an applicant knows. Nor does the B.A. signify rigorous training in argumentation, decision-making, and writing. Some newly minted graduates have taken courses that inculcated those qualities; many have not. Nor does the B.A. signify that the graduate has obtained a liberal education. The core curricula that once ensured a solid grounding in history, philosophy, the natural sciences, great literature, and the arts have all but disappeared from American colleges.

And yet the B.A. has become a prerequisite for getting an interview in vast stretches of the job market—not because a B.A. is necessary for the entry-level tasks that employers need performed, but because it represents a coarse screen for a certain degree of intelligence and a certain degree of perseverance. We are so accustomed to this use of the B.A.—and, let’s face it, it fits so comfortably with the interests of upper-middle-class parents with smart children—that we need to find ways to step back and see how bizarre the situation has become.

Try this thought experiment, which I propose in *Real Education*: You

have been made a member of a task force to design America's post-secondary education system from scratch. One of your colleagues submits this proposal:

First, we will set up a single goal to represent educational success, which will take four years to achieve no matter what is being taught. We will attach a large economic reward to it that usually has nothing to do with what has been learned. We will urge large numbers of people who do not possess adequate ability to try to achieve the goal, wait until they have spent a lot of time and money, and then deny it to them. We will stigmatize everyone who doesn't meet the goal. We will call the goal a "B.A."

You would conclude that your colleague was cruel, not to say insane. But that's the system we have.

AN ALTERNATIVE

Many young people who cannot do well in the four-year residential college program leading to a B.A. could do well in other educational configurations—if such alternatives were available, and if society accorded them more legitimacy.

In some cases, better configurations could be achieved simply by shortening the amount of time spent in school. Get rid of the four-year requirement, and many young people who are eager for careers in business, say, would do just fine in the eight or ten courses in marketing, management, and finance that they are highly motivated to take.

Other alternatives might require adaptation to different learning styles. If the traditional B.A. is the goal, there is no getting around severe demands on verbal ability in the humanities and mathematical ability in the sciences. But the skills necessary for many vocations that now require the B.A. for a job interview could be taught *better* than they are in the traditional college course. If these skills were taught in a more hands-on, apprentice-like manner, they—and the vocations opened by them—would become more accessible to people whose strengths are not linguistic and logical-mathematical.

Some improvements might just be a matter of eliminating the residential requirement. Going to live at that idyllic four-year college is just not feasible for many young people. They need alternatives that don't

require residence and a full-time commitment. Community colleges and distance-learning through the internet provide an abundance of those alternatives—but they are always going to be second-best as long as the B.A. is the goal.

The solution, then, is not a better B.A., but *no* B.A. In lieu of degrees, substitute certifications. The CPA exam for accountants is the model for occupations that lend themselves to paper-and-pencil tests. Journeyman examinations in the crafts are the model for occupations in which work samples are important. The goal is simple: Give young people a way to show prospective employers what they know and what they can do, not where they studied and for how long.

Certifications will work just as well for graduate and professional schools seeking to evaluate prospective students. What do law schools, medical schools, and graduate schools in the arts and sciences really want their applicants to bring to the graduate experience? Presumably a liberal education, along with credentials specific to the discipline. So let the schools define what that means in terms of content areas, and specify accordingly the evidence they want to see.

There are no technical obstacles to such reforms. Certification tests already exist for dozens of occupations, and the model for employing them is easy to follow. What is needed is a change in mindset: a recognition by employers, parents, students, and educators that it is wrong and punishing to use the B.A. as a prerequisite for a job interview. Employers looking for productive employees, and graduate schools looking for well-prepared students, need information—and the piece of paper called a B.A. does not provide it.

Nothing in this proposal forces students to treat college as vocational training or as a way station to graduate school. On the contrary, I can imagine the development of a certification demonstrating that someone has acquired a liberal education—a real certification of what the B.A. now falsely purports to show. It is even possible that the popularity of rigorous liberal education will grow, because many types of employers will want real evidence of a real liberal education.

Nothing in this proposal conflicts with the intangible benefits of the college experience. The maturation, development of skills in critical thinking, and the broadening of horizons that are virtues of that experience today do not depend on forcing everyone into the B.A. mold. On the contrary, insofar as students are taking courses that they want and

are motivated to take, the chances that they will benefit from their college experiences are increased.

Nothing in this proposal suggests that we should follow the German model, sorting students into vocational and academic bins at an early age and limiting their educational opportunities. On the contrary, the reason to substitute certifications for the B.A. is not to reduce options for some but to create new options for everyone. It is worth adding, however, that to avoid the German model, the government must stay out of the process. Certifications must evolve based on the evidence of learning that employers and graduate schools want, not the evidence that bureaucrats think they should want.

If certifications come to replace the B.A., colleges around the country will still be filled with students—even more students than today. The difference will be that far more of them will be there to learn, not to wait out four years. And one other difference: Today, we live in a world with first-class and second-class paths from adolescence to adulthood—college is first class, and everything else is second class. When the B.A. is no longer the universal goal of post-secondary education, it will be easier for everyone to recognize that all students who seek more education after high school are engaged in the same activity—discovering what they love to do, and learning how to do it well. For some, the things they love to do will involve the stuff of a classic liberal education. Others will pursue practical tools for making a living. But the quest is the same for all. Ridding ourselves of the B.A. is a good way to help everyone recognize that common bond.