

Why We Shouldn't Embrace the Genetics of Education

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On Monday, scientists published [a study in Nature Genetics](#) that analyzed the genes of 1.1 million people of European ancestry, including over 300,000 23andMe customers. Over 99 percent of our DNA is identical in all humans, but researchers focused on the remaining 1 percent and found thousands of DNA variants that are correlated with educational attainment. This information can be combined into a single number, called a polygenic score. – “Why Progressives Should Embrace the Genetics of Education” by Dr. Kathryn Paige Harden in the [New York Times](#), July 24, 2018.

It's that word “score” that made my heart sink a little. We love us some scores in education. SAT scores, NAEP scores, AP scores, GPA, IQ, and now here we have our “polygenic score for educational attainment.”

Data, data, data, data, data. The best kind of data ...*numbers!*

A score.

Consider that an SAT test only claims someone's time. A polygenic score requires turning over one's DNA. But anything in the name of progress, right?

We love to use scores as a way to visit misery upon students. In my field of writing instruction, the single worst influence on students' learning to write for real has been a steady increase in the importance of standardized test “scores.”

Dr. Harden believes that genetic research can help create a more just and equal society, and I'm thinking, "What society you talkin' 'bout Willis?" This is straight-up fantasyland.

There is no limit to the damage we can do when wielding a score.

According to the study produced by a team of researchers too numerous to list, what does the polygenic score for educational achievement show?

“The polygenic score we constructed “predicts” (see FAQ 1.4) around 11% of the variation in education across individuals (when tested in independent data that was not included in the GWAS).”

“Polygenic” means multiple genes. There is no single “education gene.” The score reflects a constellation of genes the researchers say correlate to educational achievement. It's a correlation not a causation. That's why they have quotation marks around “predicts.”

“Individuals with high polygenic scores have, on average, higher levels of education than those with lower polygenic scores. In the present study, we found that in a U.S. sample of young adults (the National Longitudinal Study of Adolescent to Adult Health), 12% of those with the

lowest 20% of polygenic scores graduated from college, compared with 57% of those with the highest 20% of polygenic scores.”

On average.

Can the polygenic score for educational attainment accurately predict an individual’s educational attainment?

“No. While the “predictive” power (see FAQ 1.4) of our polygenic score is substantial—it predicts 11% of variation in educational attainment across individuals—and useful for some purposes (see FAQ 1.6), it is important to keep in mind that the score fails to predict the vast majority (89%) of variation in years of education across individuals.”

What are the policy implications of this study?

“None whatsoever. Any practical response—individual or policy-level—to this or similar research would be extremely premature and unsupported by the science.”

Why am I not reassured? Perhaps because in Dr. Hardin’s op-ed those of us who “value social justice” are explicitly implored to embrace this research by asking, “How can the power of the genomic revolution be harnessed to create a more equal society?”

I don’t know about you, but that sounds like policy talk to me. Have we already blown past the cautions of a single, not-yet-replicated study?

Dr. Hardin offers two rationales for her stance:

“First, these genetic results reveal the injustice of our so-called meritocracy. As a nation, we justify stark inequalities with the idea that people who stayed in school deserve more than people who didn’t finish high school or college — more money, more security, more health, more life.”

I read this and I wonder what more there is to be known about the injustice of our so-called meritocracy that could be revealed in our biology? What mystery could actually be revealed that isn’t already well-documented?

Dr. Hardin continues with her first point:

“But success in our educational system is partially a result of genetic luck. No one earned his or her DNA sequence, yet some of us are benefiting enormously from it.”

Again, this is beyond dispute. We need no additional research to prove this. It is simply true. But Hardin framing the genetic lottery as purely having to do with our DNA is already a distortion. The genetic lottery also refers to the circumstances and privileges of our birth. The most fortunate part of my personal genetic lottery win was being born to parents who paid for my college education so I could graduate debt-free and later pursue graduate study.

Hardin’s second rationale:

“Second, knowing which genes are associated with educational success will help scientists understand how different environments also affect that success. The eventual development of a polygenic score that statistically predicts educational outcomes will allow researchers to control for genetic differences between people, so that the causal effects of the environment are thrown into sharper focus. Understanding which environments cause improvements in children’s ability to think and learn is necessary if we want to invest wisely in interventions that can truly make a difference.”

I cannot imagine a subject on which we know more about than the environments under which children learn best. It has been the subject of study and discussion for well more than a century. Are we suddenly unsure that poverty has a negative effect on educational attainment?

We know what to do for students: Feed them, make them safe, respect their autonomy, challenge and support them, give them space to fail, desegregate their schools and neighborhoods, support their teachers...need I go on. It’s not mysterious, and the remedies to our problems aren’t found in our DNA.

Now, do we achieve these things for a sufficient number of students? We do not, but it is not a problem of lacking knowledge of what we should be doing.

In fact, one of the reasons we don’t do better on creating supportive learning atmospheres is a focus on scores as proxies for something meaningful, which they are not.

The researchers say there is no policy application to their research, but the lengthy FAQ to the research which attempts to address the concerns of people like me suggests they’re well aware that this monster is going to escape the lab and start stumbling through the policy world.

Dr. Hardin says progressives should embrace this research, but how about a different scenario where a libertarian economist who believes that too much public money goes to schools and that too many students go to college who don’t belong there? What could a person with this policy agenda do with the polygenic educational attainment score?

Very Serious Economist: (Clears throat, adopts sober tone.) I am a believer in life, liberty, and the pursuit of happiness, but why are we using taxpayer money to subsidize those who have only a 12% chance of graduating college?

How long before schools subject to performance funding as determined by graduation metrics begin to discriminate against students with low polygenic educational attainment scores?

When will automated human resources algorithms start weighing polygenic educational attainment scores when sorting through job applicants?

It’s not discriminatory. It’s science!

Dorothy Roberts, U. Penn professor and author of *Fatal Invention: How Science, Politics, and Big Business Re-create Race in the Twenty-First Century* nailed my sentiments on Twitter:

There is no need for genetic tests to distribute educational resources more equally, and much evidence that adding them to our grossly unequal education system will only increase discrimination against those deemed innately less intelligent and intensify social inequities.

— Dorothy Roberts (@DorothyERoberts) [July 25, 2018](#)

As unnecessary (or outright bad) as embracing this framework in the world of policy, my real worry is in the world of education “products.”

How long before we get...

- *Test your child's polygenic educational attainment score at home and receive our complementary secrets to gene boosting pamphlet!*
- *We offer personalized learning tailored to every student's polygenic educational attainment score!*
- *Boost your polygenic educational attainment scores with our patented brain supplements!*

Imagine every terrible boom-bust cycle of every previous well-intentioned education magic bullet: delaying gratification, learning styles, self-esteem, social emotional learning, growth mindset, grit, and on and on and on, and you'll understand the future trajectory of the polygenic educational attainment score.

In fact, it's not the future, it's already here, in the form of so-called “[precision education](#),” of which the polygenic educational attainment score is merely one element.

I would call it snake oil, but snake oil is usually mostly harmless, causing a tummy ache at worst.

This is poison.

Look, I am not in the business of policing the research of others and these people are free to pursue their curiosities, but I hope we're capable of not swallowing bullshit like how progressives should embrace this stuff.

I hope that when the monster does escape the lab and starts rampaging, the researchers and their supporters will be at the front of the charge to fight back, wielding their pitchforks and torches with everything they have.

For me, I'm going to resist from the get go.