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Moving from STEM to MESH

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Abstract: America is falling behind the rest of the world in science and math. There is, therefore, a renewed emphasis on STEM subjects (Science, Technology, Engineering, and Math). But while mastery of STEM subjects is essential to the functioning of society, we've neglected some other areas that are at least as important, if not more so. But without an equal commitment to comprehensive civics education — an examination of subjects that touch on the relationships between people, government, the economy, and media — all the technical know-how in the world will be for naught. The author suggests a renewed focus on *MESH* education, which stands for **Media** Literacy, **Ethics, Sociology,** and **History.** Because if these are not given equal attention, we could end up with incredibly bright and technically proficient people who lack all capacity for democratic citizenship.

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To hear the so-called experts tell it, America is falling behind the rest of the world in science and math. Our high school students can't compete and are being out-performed in such a way that threatens the future of the American economy, to say nothing of our much-cultivated national pride.

The answer, according to the same experts, is a renewed emphasis on STEM subjects (Science, Technology, Engineering, and Math). More coding, and more calculus, less humanities and arts. Some politicians suggest tying federal aid for colleges to the employment outcomes of graduates, the presumption being that art history and literature majors are destined for a lifetime of waiting tables while their engineering counterparts obtain financial security and make a "real contribution" to the world.

But while mastery of STEM subjects is essential to the functioning of society, it often seems as though we have become so obsessed with STEM, so focused on steering young people into those fields (and judging the quality of their education by how well they perform in these areas) that we've neglected some other areas that are at least as important, if not more so. It is one thing to acknowledge the value of STEM subjects, but quite another to fetishize these in a way that reduces education to the mastery of specialized technical skills.

It is one thing to notice — and seek to correct — the under-representation of folks of color (and all women) in STEM fields, but quite another to suggest that everything will be fine if we can just get black kids coding and women (of whatever race) extending the horizons of string theory.

Tim Wise is an antiracist activist, essayist and author of seven books on racism, inequality and white privilege. Wise has spoken to over a million people in 49 states and on over 700 college campuses since 1995. He has conducted anti-racism training for teachers nationwide, as well as corporate officials, law enforcement officers, government agencies, the military, doctors, and social service providers. Wise has appeared on hundreds of radio and television programs to discuss racism in America, and his writings are taught at colleges and universities across the nation.

Yes, science, technology, engineering, and math will all be vital to helping us solve the looming (and quite present) ecological crisis, to say nothing of repairing critical infrastructure, becoming energy independent, and addressing any number of health-related emergencies around the globe.

But without an equal commitment to comprehensive civics education — an examination of subjects that touch on the relationships between people, government, the economy, and media — all the technical know-how in the world will be for naught.

For this reason, I would suggest a renewed focus on *MESH* education, which stands for **Media** Literacy, **Ethics, Sociology,** and **History.** Because if these are not given equal attention, we could end up with incredibly bright and technically proficient people who lack all capacity for democratic citizenship.

Oh, we'd have people who understand science, for sure; but we have that now. We have plenty of scientists who tell us, in no uncertain terms, that we are nearing a tipping point when it comes to global climate change. The problem is not the science. The problem is that we lack the political will to do what the science tells us we must.

We lack the media literacy to filter out the propaganda peddled by the fossil fuel industry and the politicians who do their bidding. We lack the ethical grounding to weigh our long-term obligations to future generations against the short-term costs of transitioning to renewable energy and rethinking current patterns of consumption and production. We lack the sociological imagination needed to analyze the power dynamics that make polluting industries so powerful, and the historical memory that might allow us to learn from past struggles against corporate irresponsibility as we fight for a healthier future.

A quick glimpse at the pillars of MESH education should make quite apparent why they're so needed.

The importance of media literacy should be clear to all, and yet rarely is it taught in school.

Whether for separating fact from fake news, learning to analyze the effects of advertising on consumer choices, or shoring up resistance to the trolling of bad actors seeking to manipulate public opinion for the benefit of particular political candidates, media literacy is a vital skill in the modern era. Young people are bombarded with more media than any generation before them and must be equipped to sift through the garbage to find the information they'll need to properly function in the world and contribute to the future.

Perhaps less obvious but just as important is to involve students in conversations about ethics and values.

Ethics as a subject is something most Americans never fully engage unless they take an elective class in college or major in philosophy. But ethical dilemmas are all around us and worthy of engagement by everyone, not just a select few. From figuring out the proper balance between the environment and economic development to our mutual obligations to one another at the local, national and global levels, there are no political issues that do not pose serious questions of ethics and values. Yet we rarely discuss these things outside the confines of religious institutions or philosophy seminars. That must change.

Sociology is another subject most will never study, but which offers essential insights for understanding how society functions.

As the study of group interactions and social power relationships, sociology helps people see the various institutional dynamics that explain why things are the way they are. Without a sociological imagination, it's hard to fully understand issues of inequality, wealth, poverty, or group conflict and how those shape our world.

And needless to say, history education in America is laughable.

In a nation where children are more likely to grow up knowing an entirely fabricated story about George Washington and the cherry tree than they are about Washington's ownership of other human beings (and how central slavery was to the building of the nation), we are a country filled with people who border on historically illiterate.

As the semi-hysterical reaction to *The New York Times'* "1619 Project" demonstrates, too much of America is still unwilling to grapple with our history in any but the most rah-rah, patriotic of ways. We want the good and demand a retelling of it. But we wish to leave the less salutary aspects of our past in the past, even as doing so makes it impossible to see how they have shaped the present and may well influence the future. So many of the issues that currently roil the nation, from immigration to the conflict between law enforcement and communities of color, to how we (mis)remember the Civil War and the Confederacy, are rooted in inadequate history education. Again, we deserve and need much better.

I guess the point is this: STEM is *necessary but not sufficient*. And if we do not balance our push for better STEM education with an equal commitment to the mastery of MESH subjects, the future could end up being one in which we have lots of incredibly smart tech bros (and gals), but not very many functional citizens.

After all, I know plenty of brilliant, even genius-level mathematicians and scientists. These are people I want working on cures for disease, calculating the maximum weight-bearing load of bridges and the design of airplanes, and figuring out how to secure the electrical grid and internet from malicious hackers and cybercriminals. But they are not people I necessarily trust to pick the next president or decide who sits in Congress; at least not by themselves. Their skill sets do not imbue them with any greater moral or ethical insights than those of others. Their IQs do not correlate to any necessary degree with other traits essential for the functioning of a democratic society: things like empathy, compassion, reciprocity, solidarity, or mutual sacrifice. Because those are not things you can teach in a lab. There's no app for any of that.

Indeed, for things like science to function properly, MESH education will be necessary. Contrary to the apparent beliefs of some, science does not function as an instrument of truth on its own. Though scientists often labor under the conceit that their endeavors are rooted in objectivity, nothing could be further from the truth. The scientific method has been abused throughout history and often for incredibly oppressive ends. Science was used to justify enslavement, the genocide of indigenous peoples in the Americas, segregation, denying women the vote, and the involuntary sterilization of tens of thousands of women (mostly of color but also poor whites) in the 20th century.

Hitler's eugenics programs — part of his desire to breed a master race and eliminate "undesirables" — were not of his own creation. The ideas for them were birthed in the labs and offices of America's leading scientific thinkers: men who enjoyed prominent positions at the nation's best universities.

In other words, merely focusing on science — absent the political determination to apply science to causes that are beneficial to all — will offer little of value to the future.

Without a historical understanding of how science has been weaponized against specific populations, scientific literacy itself is no guarantor of societal uplift and advancement. And without a sociological imagination, which recognizes the power dynamics that have allowed science to be misused, so too will science *qua* science be rendered meaningless.

Likewise, with technology or engineering: We can produce millions of computer programmers, designers, and app developers, for instance; and with a significant STEM emphasis, perhaps we will. But for what ends?

Will their developments be used to produce more democracy, more freedom, more equity, and just human relationships? Or will they be used to further inequality and to reproduce existing political and economic hierarchies? Because they are capable of producing either set of outcomes: those that are public minded and further democracy, or those that would only enhance private power. The answer to the question will be determined by what we teach about our civic responsibilities to one another. And that will not be taught in a coding seminar or calculus class.

Ultimately, our schools cannot sacrifice their primary mission — the creation of more fully-formed and functional human beings — for the needs of big business, Silicon Valley, or the desire to catch other countries in one or another global math competition.

The future of the nation and the world depends on an engaged, informed, and critically-thinking population. That means we need more than just STEM, more than technological advances, and more than high standardized test scores. We need MESH and civic competence as well.

Editor's note: This article was previously published here: https://medium.com/our-human-family/forget-stem-we-need-mesh-43ab6f6273cd and has been revised for this issue.

Author thumb

Bio

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