Inequality is today’s greatest challenge to fostering learning

Structural inequality should factor into our interpretations of the influence of the environment on development

by Rebecca Merkley
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Income inequality is growing in many countries and has a negative influence on educational achievement. While the academic achievement gap in the U.S. has received increased attention recently, it is a global phenomenon.

A comparison of math performance levels across countries in Latin America and sub-Saharan Africa revealed that the poorest children in wealthier countries with more income inequality, such as South Africa and Brazil, had lower levels of educational achievement compared to the poorest children in poorer countries, such as Uganda and Mozambique. Moreover, achievement gaps like those seen in the U.S. have not been consistently analysed and documented in Canada, but a recent report revealed growing achievement gaps based on income and race in Toronto.

Taken together, income inequality seems to have a more systematic effect on educational outcomes than any of the cognitive or biological factors I explore in my own research as a developmental cognitive neuroscientist. We know that poverty has adverse effects on brain and cognitive development, and this likely plays a role in the relationship between socioeconomic status and educational achievement. As scientists, we need to work harder to communicate this to educators and policymakers as well as to consider the interaction of socioeconomic status with cognition and biology in our own research.

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Throughout my research training, I have been optimistic about the potential of the Science of Learning to inform education policy and practice. I was lucky enough to be accepted to the Mind, Brain, and Education program at Harvard Graduate School of Education where I met others who shared that optimism. One of my classmates, Corey Gaber, is now a 6th grade ELA teacher in Baltimore City Public Schools and has written about how socio-political factors account for much more variance in student outcomes than classroom teaching does.

When I asked his opinion on the greatest challenge to fostering learning he said, “educational
neuroscience’s apolitical nature could potentially help replicate the unjust structures that it ideally is supposed to transform." He makes an important point about how scientists should not ignore the role of policy in education.

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I am currently teaching a seminar course in developmental cognitive neuroscience and my students and I regularly discuss how developmental science relates to policy. We read cutting-edge research and discuss topics such as, "Should adolescents be tried as adults?" and "Is screen time detrimental to child development?"

The debate is typically reduced to nature vs nurture and students inevitably conclude that cognitive development arises from a complex interaction between the two. No matter which domain of development we discuss in class, I now find myself steering the conversation each week towards the role of socio-political factors as ‘nurture’ in development. One student recently told me that her biggest takeaway from the class thus far is that socioeconomic status matters.

It has become increasingly clear to me that I need to account more for the role of structural inequality in my thinking on theories of cognitive development. The interpretation of gene by environment interactions and epigenetics is further complicated by the fact that the environment is not one that provides equal opportunity.

I am still excited by the potential of advances in the Science of Learning for improving education. However, as developmental scientists, we can do better at studying more diverse samples and accounting for the impact of socio-political factors in our research.

Furthermore, we should advocate for policies like universal high-quality early childcare, healthcare, and paid parental leave, that we know will contribute to healthy child development. Only then will we be able to realize the full potential of advances in science and technology for increasing educational opportunities for all.

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