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THE BLOG

## **Brain Science Gives Us Evidence That Effort --Not IQ or ZIP Code -- Paves the Path to Success**

As it turns out, we are not "set in stone" at birth -- not by genetics, not by the luck-of-the-draw of our ZIP code.



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## **<u>Click here</u>** to watch the TEDTalk that inspired this post.

The question of how one achieves academic "success" has been explored and debated for years, but only recently have we acknowledged the role of "effort" in the equation.

Call it resilience, perseverance or "grit" -- as Angela Lee Duckworth did in her TEDTalk and as Paul Tough wrote in his recent book, *How Children Succeed: Grit, Curiosity, and the Hidden Power of Character.* 

Or you could call it by the name Aliana -- a special-education student in New York City whose frustrated teacher told her she had no future. But then Aliana transferred to a school in Connecticut, where neuroscience was inspiring culturally responsive teaching that was introduced to boost student achievement. Teachers there are "fearless leaders" who use affirmation, inspiration and pedagogical practices to create a "growth mindset" (derived from the work of Carol Dweck of Stanford University, as Duckworth referenced in her TEDTalk) in their students.

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## Aliana and her classmates bridged the gap between potential and achievement,

repudiating the racial stereotypes associated with the <u>"achievement gap"</u> between white and black students.

In a videotaped interview, Aliana said effort, teachers' belief that she could do well, and the application of engaging instructional strategies enabled her to master rigorous content and earn top test scores. In the videotape, it is clear that Aliana was transformed by this learning experience. "Without reading," she said, "Where are you? What can you do in life?"

Now on what she called a "regular academic" learning track, Aliana said she has learned to believe in her ability to succeed, think critically and develop academic vocabulary not used in her home.



Her advice to teachers: "Don't underestimate your students."

Any way you slice it, it's clear that attitude and character fuel the effort that builds the momentum that charts a life's trajectory.

As it turns out, we are not "set in stone" at birth -- not by genetics, not by the luck-of-thedraw of our ZIP code.

And neuroscience is revealing that even our capacity to persevere -- our "grit" -- is hardly static. While genetics influence brain development, some functions are far more affected by life experience, the research shows.

For example, stress that results from experiencing prejudice, low self-esteem or feelings of failure releases a hormone called cortisol - which is produced in the adrenal glands and controlled by the hypothalamus - that can inhibit comprehension and memory, and cause an individual to repeat self-sabotaging patterns. Under these circumstances, neuroscience might tend to suggest that neural pathways have become less pliable in many urban students.

Fortunately, the brain is remarkably pliant.

When we alleviate stress and provide guided, deliberative education interventions, the brain can connect with new ideas and concepts- prompting the release of hormones that focus our attention and strengthen the myelin sheath or insulation that wraps neural circuits. This chain reaction increases signal strength, speed and accuracy and boosts our confidence, thereby creating productive neural pathways.

We know more about connecting with students, too -- whether we're talking about innercity children who tend to score poorly on academic achievement tests, or children from wealthier families who develop "fixed mindsets" and work solely for the good grade rather than developing the perseverance that learning from failure might instill.

At the <u>National Urban Alliance for Effective Education</u>, we know that connecting with a student's frame of reference and knowledge base can lead to deep learning. In districts throughout the country, educators use "culturally responsive teaching" -- rhymes, rhythms, rap and other approaches that are rooted in the life experience of the child -- to engage students who were once considered to be "unteachable" in such subjects as science and math.

But here's what we know, unquestionably: The more teachers believe in their students, the more students will believe in themselves.

In his book, *Colorblind: The Rise of Post-Racial Politics and the Retreat from Racial Equity*, Tim Wise writes about a Colorado math teacher who inspired significant academic gains and educational experiences by telling his black students "... in no uncertain terms the system is an unjust racist one, and there are people prepared to make you statistics. You can either collaborate with your own destruction or blow up the statistics and prove everyone wrong."

The teacher's honesty, coupled with his belief in his students, enabled black students' scores to soar and "... inspired the creation of a mentoring group, set up by the black students themselves, to encourage one another to strive for excellence."

Can effort pave the path to academic achievement and true learning? Does character deepen talent? Should we consider attitude -- not just aptitude and IQ -- as critical keys to success? The answer to each of these questions is a resounding yes.

As Duckworth suggests in her TEDTalk, the sky's the limit -- if we just can change the conversation.

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