



MINDSET
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Funder Briefing: The Science & Practice of Belonging
November 27, 2018

Greetings,

On behalf of everyone at the Mindset Scholars Network, I want to thank you for making time to participate in our third annual funder briefing.

When we began these briefings in 2016, our aim was to create a venue to update members of the philanthropic community on the latest findings from mindset science and its current applications. This year, we have expanded our goals for the event. We are focused on a single theme—students’ sense of belonging in school and its impact on educational outcomes—and we have increased the number of speakers. We are featuring 25 experts who bring a wealth of knowledge from research, practice, and policy. Many are working together in active collaborations across these lines.

We have a full agenda for November 27th. To help make the most of our time together, please review this briefing book prior to the event. In it, you will find background information about the network, our key projects related to belonging, and our speakers and their organizations. It also includes explanations of core concepts from belonging research and suggested readings for those who would like to dive deeper into the science.

A Brief History

Founded in 2015, the Mindset Scholars Network is a group of leading social scientists devoted to improving learning and expanding educational opportunity by advancing our understanding of how students’ psychological experience of learning and school influences their educational outcomes. We accomplish this by launching novel interdisciplinary research, providing leadership to the scientific community, and conducting outreach to policymakers, practitioners, and intermediaries on insights and approaches from research that can change students’ experience of school.

A central tenet from decades of research in psychology is that how people *make meaning* of themselves, others, and their situations shapes their motivation, behaviors, and outcomes. For example, if a student interprets challenges at school as an indication that they don’t belong or can’t “cut it,” then they may begin to disengage from academic and social behaviors that are important to success in that environment.

Researchers have identified a number of beliefs that shape this meaning-making; these beliefs are the lenses through which people construe their experiences. They include beliefs about the nature of intelligence and the relevance and larger purpose of one’s schoolwork: Is my ability fixed? Is this work meaningful? They also include beliefs about belonging: am I someone who belongs in this environment?

These questions arise from socio-cultural contexts, and the interaction of people's identity with those contexts. As such, the concept of belonging and efforts to study and address it are inherently complex and interdisciplinary. The practices, policies, and cultural norms of American schooling often signal to some groups and individuals that they belong in school and to others that they do not.

The answers people generate to these pressing questions are shaped by cues in their environment. In the case of belonging: Are people like me represented in this space? What cultural norms are being signaled by the people, practices, and policies of this institution? Do my teachers and peers in this class respect me and expect me to excel?

When students can answer these questions affirmatively, they are more likely to persist in the face of the setbacks and challenges that are essential to learning and growth. When students' sense of belonging is uncertain, they are more likely to withdraw and disidentify from that context.

It is not hyperbole to say that belonging is the foundation on which learning and success in school rests. For some students, belonging in school is something that they can take for granted. For other students, their cognitive focus at school is divided between wondering whether they belong and learning what they are being taught.

Fortunately, we know from experimental studies that belonging—like other beliefs that shape meaning-making—is malleable and responds to interventions aimed at both students and their contexts. We can intervene in ways that cause students' sense of belonging to increase, which leads to improved academic outcomes. A key question for the field is how these efforts ought to vary to be responsive to different individuals and contexts. The experts speaking at this year's funder briefing are on the cutting edge of efforts to promote and study belonging in a variety of K-12 and postsecondary settings.

What Comes Next

Please bring this briefing book with you on November 27th. To save trees, we will not have hardcopies available at the event. Please also bring your questions and your curiosity. We anticipate a lively discussion of this research and its applications in practice and policy.

I look forward to seeing you in Seattle!

A handwritten signature in black ink, appearing to read 'Lisa Quay', with a stylized, flowing script.

Lisa Quay
Executive Director

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MEETING AGENDA

8:00 a.m. Breakfast available

8:30 a.m. Welcome and introduction to the science of belonging

Lake Union + Lake Washington Room

Brad Bernatek, Bill & Melinda Gates Foundation

Lisa Quay, Mindset Scholars Network

9:30 a.m. Studying belonging in education: Origins, current themes, and future possibilities

Lake Union + Lake Washington Room

A conversation with Mary Murphy, Claude Steele, and Greg Walton

10:30 a.m. Break

10:45 a.m. Bridging the science of belonging and practice in K-12 and postsecondary contexts, part 1 (*select one session to attend*)

K-12 Session

Lake Union + Lake Washington Room

Moderator: Lija McHugh Farnham

Speakers:

- Angela Jerabek, BARR Center & Hans Bos, American Institutes for Research
- Stephanie Fryberg, University of Washington
- Sasha Rabkin, Equal Opportunity Schools & Greg Walton, Stanford University
- Chris Chatmon, Oakland Unified School District Office of Equity and Kingmakers of Oakland & Tom Dee, Stanford University

Postsecondary Session

Elliott Bay Room

Moderator: Donald Kamentz

Speakers:

- Mesmin Destin, Northwestern University & Bethany Little, EducationCounsel
- Chris Hulleman, Motivate Lab and University of Virginia & LaDonna Young, Southwest Tennessee Community College
- Chris Smith, College Transition Collaborative & Shannon Brady, Wake Forest University & Cathy Buyarski, Indiana University-Purdue University Indianapolis

12:15 p.m. Lunch

Lake Union + Lake Washington Room

1:00 p.m. College Transition Collaborative belonging field trials: An early look at impact findings and discussion of future directions

Lake Union + Lake Washington Room

- Chris Smith, College Transition Collaborative

- Greg Walton, Stanford University
- Shannon Brady, Wake Forest University
- Cathy Buyarski, Indiana University-Purdue University Indianapolis

2:15 p.m. Break

2:30 p.m. Bridging the science of belonging and practice in K-12 and postsecondary contexts, part 2 *(select one session to attend)*

K-12 Session

Lake Union + Lake Washington Room

Moderator: Maša Užičanin

Speakers:

- Jason Okonofua, University of California, Berkeley & Johnetta Haugabrook, Pinellas County Schools
- DeLeon Gray, North Carolina State University & Shamia Truitt-Martin, Carrington Middle School
- Dave Paunesku, PERTS & Mayme Hostetter, Relay Graduate School of Education
- Cassandra Herring, Branch Alliance for Educator Diversity

Postsecondary Session

Elliott Bay Room

Moderator: Donald Kamentz

Speakers:

- Mary Murphy, Indiana University
- Evelyn Carter, University of California, Los Angeles Office of Equity, Diversity & Inclusion
- Nicole Stephens, Northwestern University
- Claude Steele, Stanford University

4:00 p.m. Break

4:15 p.m. Group discussions: Articulating field-level priorities for belonging *(pick one)*

K-12 Session:

Lake Union + Lake Washington Room

Postsecondary Session:

Elliott Bay Room

5:15 p.m. Conclusion

Lake Union + Lake Washington Room

Lisa Quay, Mindset Scholars Network

5:30 – 7:00 p.m. Cocktail reception

Lake Union + Lake Washington Room

What We Know About Belonging from Scientific Research

BY CARISSA ROMERO

OCTOBER 2018

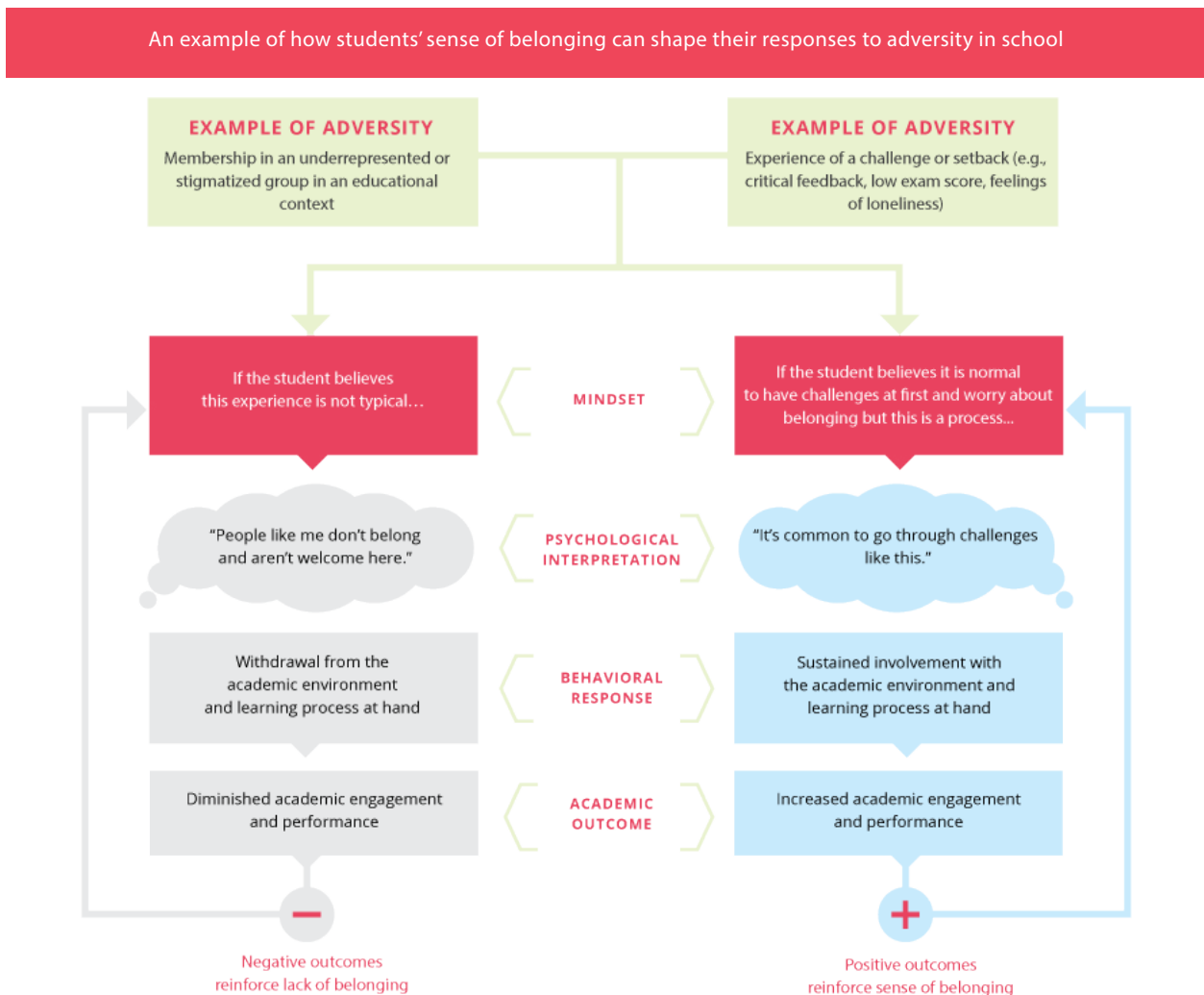
BELONGING: WHAT IS IT?

Students with a sense of belonging in school feel socially connected, supported, and respected. They trust their teachers and their peers, and they feel a sense of fit at school. They are not worried about being treated as a stereotype and are confident that they are seen as a person of value.

WHY DOES IT MATTER?

Students who are confident they belong and are valued by their teachers and peers are able to engage more fully in learning. They have fewer behavior problems, are more open to critical feedback, take greater

advantage of learning opportunities, build important relationships, and generally have more positive attitudes about their classwork and teachers. In turn, they are more likely to persevere in the face of difficulty and do better in school.



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When students are uncertain about whether they belong, they are vigilant for cues in the environment that signal whether or not they belong, fit in, or are welcome there. They may also be concerned about confirming a negative stereotype about their group. This hypervigilance and extra stress uses up cognitive resources that are essential for learning, diminishing their performance and discouraging them from building valuable relationships.

Students from underrepresented or negatively stereotyped groups may worry about whether people like them are accepted by their peers and teachers

Sometimes, students may question whether or not they belong in their classroom or school. These questions about belonging are most common among students from negatively stigmatized groups. These students are aware that they are underrepresented in a particular environment and recognize that negative stereotypes exist about their group. Claude Steele has compared this to the feeling of being told there is a snake in your house. It could be anywhere and it could harm you, but it also might not; regardless, you are constantly on the lookout.

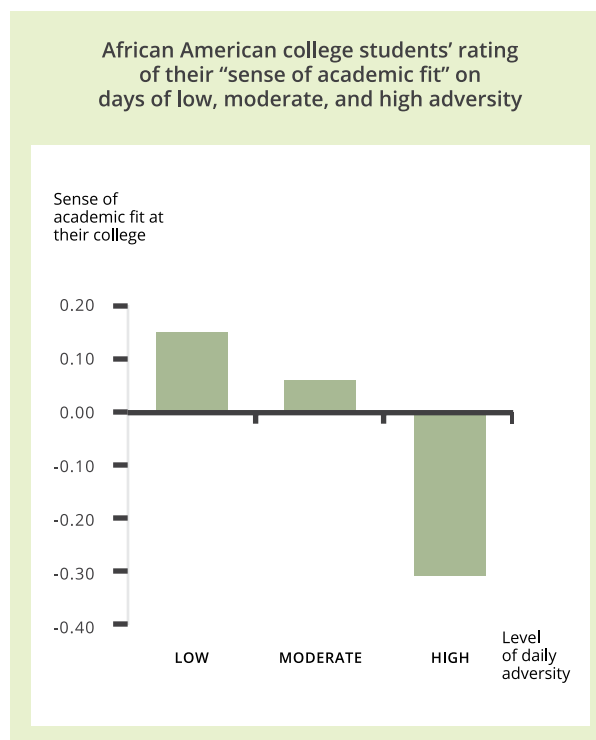
These students are forced to split their attention between assessing their belonging and focusing on the learning task at hand

When students have questions about their belonging, they search for cues in their environment to signal whether or not they fit in and are valued by others at school. When things are going well in school, they feel like they do belong. But when they experience adversity, their sense of belonging can decrease.

This vigilance to cues of whether or not they belong can become distracting and undermine performance. Cognitive resources that would otherwise be used to focus on learning are instead used to figure out if they belong. Because questions about belonging undermine performance and are more pervasive and persistent for students from underrepresented and stigmatized groups, they contribute to achievement gaps.

Students who are confident they belong and are valued by their teachers and peers are able to engage more fully in learning.

FIGURE 1. Unlike white students, African American students' sense of belonging in college was tied to the amount of adversity they experience on a given day



SOURCE: WALTON & COHEN, 2007

WHAT WE'VE LEARNED ABOUT HOW TO ALLEVIATE QUESTIONS ABOUT BELONGING

Studies show that brief programs can help alleviate students' worries about fit and belonging. In recent years, researchers have also learned more about the instructional and institutional practices that make students confident they are accepted members of their school community.

Direct-to-student programs and changes in instructional and institutional practices have been linked to long-term gains in academic performance and reductions in achievement gaps on the basis of race, ethnicity, gender, and being the first in one's family to go to college.

When students have questions about their belonging, they search for cues in their environment to signal whether or not they fit in and are valued by others at school.

Effective programs help students understand and normalize questions about belonging

Programs that help reduce concerns about belonging have been particularly effective at reducing achievement gaps.¹

In some of these programs, students read findings from a survey of more senior students. The findings that are presented show that everyone questions their belonging during academic transitions, but that these concerns typically lessen over time. They also include quotes from more senior students that specifically address their worries, such as:

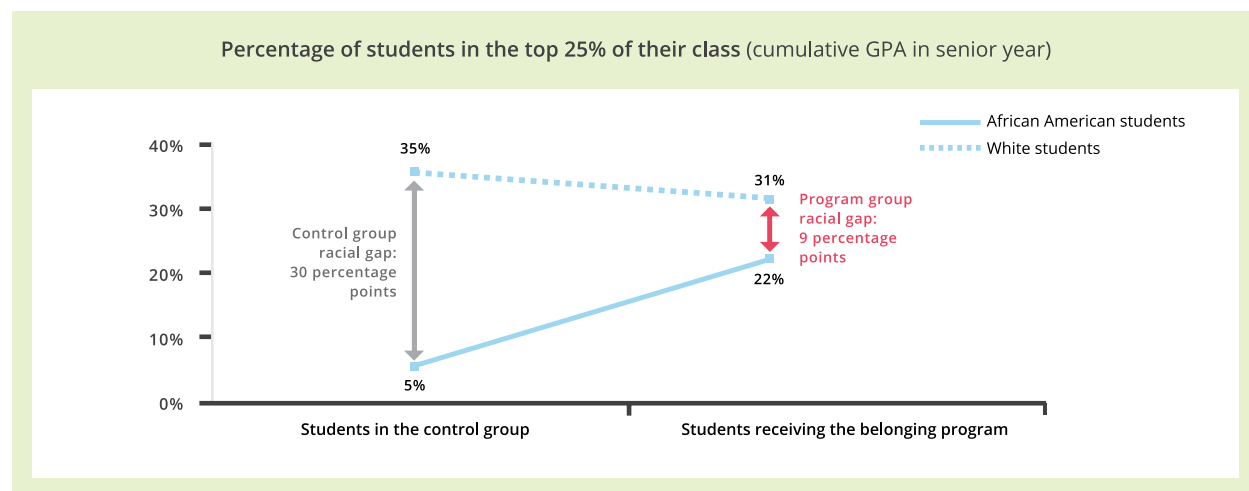
“As excited as I was to come here, I must admit that part of me thought I had been accepted due to a stroke of luck, and that I would not measure up to the other students. Early on, I bombed a test. It was the worst grade I’d ever received, and I felt terrible and isolated. But then, I found out I wasn’t the only one. No one did well on that test. It was really hard—the professor was trying to set a high standard. He knew it’d be tough, but he knew that if we worked hard we could get to that level. It wasn’t for some time that I believed that I was up to par and could totally hold my own. But eventually I did, and this place started to feel more like home. Though I still have doubts about myself sometimes, I know they’re the kinds of things everybody feels on occasion.”

After students read the survey results and student quotes, they write about how their own experience is similar to those of the students they read about. They are told that their experiences will be shared with future students making a similar transition. Similar to other mindset interventions, this writing exercise helps students internalize the key message of the program and makes participation an honor rather than a remediation.

Other programs educate students from underrepresented groups (e.g., first-generation college students) about how their backgrounds may affect their experiences in school. The “difference-education” program emphasizes how students’ social-class backgrounds can be sources of challenge and strength—and provides students with strategies for how to navigate the transition to college successfully, and how these strategies might differ depending on their social-class background. For example, incoming students heard a first-generation college student respond to the question, “Can you provide an example of an obstacle that you faced when you came to [this university] and how you resolved it?” in the following way:

“Because my parents didn’t go to college, they weren’t always able to provide me the advice I needed. So it was sometimes hard to figure out which classes to take and what I wanted to do in the future. But there are other people who can provide that advice, and I learned that I

FIGURE 2. When African American college students received a belonging program in their sophomore year, the proportion who were in the top 25% of their class by senior year more than quadrupled



SOURCE: WALTON & COHEN, 2011

Direct-to-student programs and changes in instructional practices have been linked to long-term gains in academic performance and reductions in achievement gaps on the basis of race/ethnicity, gender, and being the first in one's family to go to college.

needed to rely on my adviser more than other students.”

Belonging programs have reduced achievement gaps significantly

Programs that mitigate questions of belonging have reduced racial achievement gaps in college grade point average (for example, see Figure 2), decreased gaps between first- and continuing-generation college students' achievement, reduced gender gaps in STEM courses, reduced disciplinary citations in middle school, and even improved African American college students' health and happiness in college and their life and career satisfaction years later.²

Instructional practices that promote trust and enhance belonging also have long-lasting effects on student outcomes

Researchers have also tested certain instructional practices that improve belonging among students from negatively stereotyped groups. One study examined the effect of teachers' critical feedback on 7th graders' academic behaviors. When the teacher's criticism on an essay was accompanied by a message that conveyed high standards and assurances that they were confident the student could meet those standards, African American students were over four times as likely to revise and resubmit the essay than if they received the criticism alone; this type of feedback also improved the quality of students' revisions.³

Re-building trust during a critical developmental window can have long-lasting effects. Follow-up on these same students showed that students who received a personal note that built trust with a teacher in 7th grade were more likely to enroll in a 4-year college immediately after graduating from high school compared to those who did not receive the note.⁴

Institutional actions also affect students' sense of belonging

Researchers are exploring how institutional policies and practices can shape students' sense of belonging—and how they can be modified to support students' sense of belonging. One area of recent study is students' experience of being placed on academic probation, which can provoke feelings of shame and stigma that can lead students to disengage from the academic environment. Changing the content of academic probation letters to clearly signal the institution's ongoing respect for and valuing of the student, acknowledge the real challenges students may face, and emphasize probation as a process and the potential to return to good academic standing has been found to reduce students' feelings of shame and stigma. This modified communication increased the likelihood that students took advantage of academic supports available on campus. In one sample, the revised letter raised students' likelihood of returning to good academic standing from 26% to 43%.⁵

¹ Yeager, D. S. & Walton, G. (2011). Social-psychological interventions in education: They're not magic. *Review of Educational Research*, 81, 267-301. Walton, G. M., & Cohen, G. L. (2007). A question of belonging: race, social fit, and achievement. *Journal of Personality and Social Psychology*, 92, 82. Walton, G. M., & Cohen, G. L. (2011). A brief social-belonging intervention improves academic and health outcomes of minority students. *Science*, 331, 1447-1451. Stephens, N. M., Hamedani, M. G., & Destin, M. (2014). Closing the social-class achievement gap: A difference-education intervention improves first-generation students' academic performance and all students' college transition.

Psychological Science, 25, 943-953.

² Walton & Cohen, 2011. Stephens, Hamedani, & Destin, 2014. Yeager, D. S., Purdie-Vaughns, V., Garcia, J., Apfel, N., Brzustoski, P., Master, A., Hesser, W. T., Williams, M. E., & Cohen, G. L. (2014) Breaking the cycle of mistrust: Wise interventions to provide critical feedback across the racial divide. *Journal of Experimental Psychology: General*, 143, 804-824. Yeager, D. S., Purdie-Vaughns, V., Hooper, S. Y., & Cohen, G. L. (2017). Loss of institutional trust among racial and ethnic minority adolescents: a consequence of procedural injustice and a cause of life-span outcomes. *Child Development*, 88, 658-676. Walton, G. M., Logel, C., Peach, J. M., Spencer, S. J., & Zanna, M. P. (2015). Two brief interventions to mitigate a "chilly climate" transform

women's experience, relationships, and achievement in engineering. *Journal of Educational Psychology*, 107, 468. Goyer, J. P., Cohen, G. L., Cook, J. E., Master, A., Okonofua, J. A., Apfel, N., & Walton, G. M. (under review). Brady, S. T., Walton, G. M., Cohen, G. L., Jarvis, S. (in prep). Downstream consequences of a social-belonging intervention in the transition to college.

³ Yeager et al., (2014).

⁴ Yeager, D. S., Purdie-Vaughns, V., Hooper, S. Y., & Cohen, G. L. (2017).

⁵ Brady, S. T., Walton, G. M., Cohen, G. L., Fotuhi, O., Gomez, E., & Urstein, R. (in prep). Revising the scarlet letter of academic probation: Reframing institutional messages to increase student success and reduce shame and stigma.



Leveraging Mindset Science to Design Educational Environments that Nurture People's Natural Drive to Learn

BY LISA QUAY

RESEARCH SYNTHESIS | OCTOBER 2017

MOTIVATION IS A KEY DETERMINANT OF LEARNING

Human beings are born to be learners and doers. People are naturally curious.ⁱ Motivation is the psychological process that *propels* learning; its function is to mobilize the brain to engage in learning and development.ⁱⁱ When people's basic physiological needs are satisfied, motivation is a critical driver of how much, and how deeply people learn.ⁱⁱⁱ

This natural desire to learn is sustained when a few core psychological needs are met. People need to feel competent. They need to feel connected to others. They need to feel capable of expressing their authentic self and taking action.^{iv}

Because of these core needs, people feel an emotional pull to participate in tasks at which they feel capable of succeeding, that engage them in a collective endeavor, and that they perceive as valuable (e.g., that are interesting or relevant to realizing meaningful goals or a valued identity). People need to want to do a task, feel safe and connected to others in doing the task, and believe they can do the task with the right support. When these conditions are met, people are more likely to choose challenging tasks, persist in the face of difficulty, learn more deeply, and achieve at higher levels.^v

Many external factors affect the motivation to learn. Students need a safe, healthy environment and enriching experiences outside of school. They need to be free from the fear of being

HIGHLIGHTS

- People are born to learn and motivation is the fuel that propels learning
- How people make meaning of their experiences in school (their 'mindsets') is one important factor that affects their motivation to learn and their ability to learn effectively
- The mindsets students develop about learning and school are reasonable inferences from their social environment and are shaped by systemic inequities in society
- Students' mindsets are malleable and can change when we change the messages we send them: from society, in school, and through targeted psychological interventions
- Retooling schools and postsecondary institutions to align with insights from mindset science has the potential to nurture the inherent drive to learn with which people are born and enhance learning outcomes and educational equity

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harassed or bullied. Additional in-school factors affect the opportunity to learn, from the presence of trained educators to cognitively-rich instruction in learning strategies and content knowledge. An absence of these factors serves as a headwind to motivation and learning.

PEOPLE NEED TO WANT TO DO A TASK, FEEL SAFE AND CONNECTED TO OTHERS IN DOING THE TASK, AND BELIEVE THEY CAN DO THE TASK WITH THE RIGHT SUPPORT. WHEN THESE CONDITIONS ARE MET, PEOPLE ARE MORE LIKELY TO CHOOSE CHALLENGING TASKS, PERSIST IN THE FACE OF DIFFICULTY, LEARN MORE DEEPLY, AND ACHIEVE AT HIGHER LEVELS.

Yet even if these foundational elements are in place, students will not be motivated to engage in the learning behaviors that are necessary to master academic content unless they are confident they are cared about, feel connected to teachers and peers with shared intentions for learning, see the value of what they are being asked to learn, and believe they have a real chance to succeed.^{vi}

The current structure of the American education system comes from a time when we had less scientific understanding about the factors that shape people's motivation

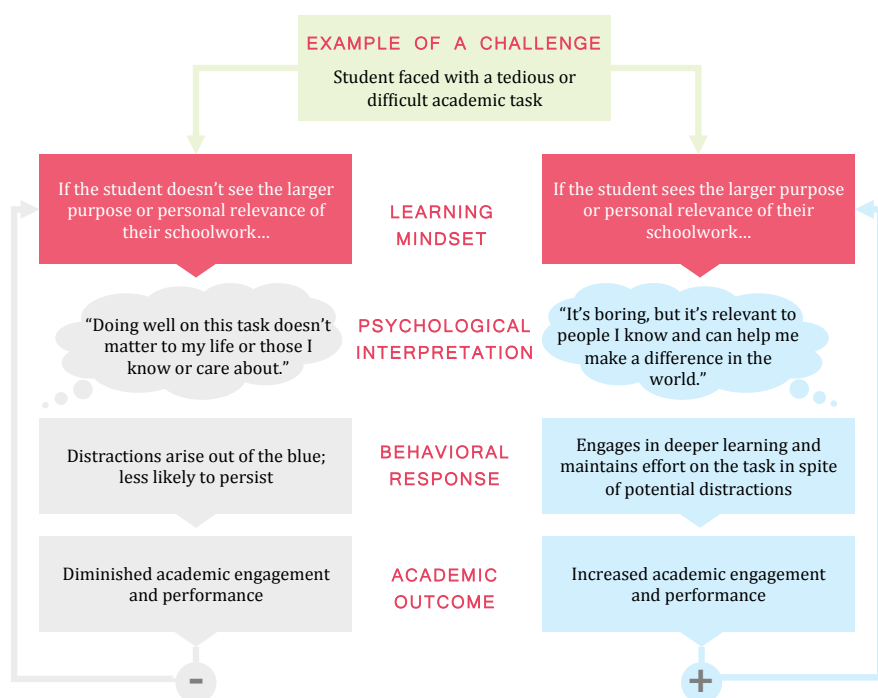
to learn and how motivational processes affect cognition. Focusing on how we can design schools and classrooms that nurture people's natural desire to learn is critical when considering many pressing challenges in education, from implementing more rigorous academic standards and increasing college completion to addressing persistent disparities in school discipline and STEM participation.

HOW PEOPLE MAKE MEANING OF THEIR EXPERIENCES IN SCHOOL IS A KEY FACTOR THAT AFFECTS THEIR MOTIVATION TO LEARN AND THEIR ABILITY TO LEARN EFFECTIVELY

Myriad factors shape students' motivation to learn. But one key determinant of motivation is the beliefs that students come to hold about themselves, their relationship to others, and the work they are asked to do in school. These beliefs are shaped by students' observations of the world around them; they are reasonable inferences that reflect students' reality. They represent "working hypotheses" about who students are, the way the world works, and their place in it.^{vii} These beliefs (or '[mindsets](#)') are the lenses through which students make meaning of, or *construe* their experiences in school. These interpretations, in turn, shape their responses.

As Walton and Wilson note, "virtually every situation is open to interpretation... and it is the interpretation people draw that guides behavior."^{viii} Certain mindsets make it reasonable from students' point of view to disengage

Figure 1. Mindsets shape behavior by affecting how people make meaning of their experiences, particularly challenges (mindset featured in this example: whether or not students believe the work they are asked to do is relevant to their life or connected to a larger purpose)



when they struggle, while other mindsets make it reasonable to seek out and persist in the face of challenges (see Figure 1, previous page). It is logical that students will not be motivated to persist at tasks they find tedious or difficult if they see their schoolwork as lacking in meaning. But if they see what they are learning in school as something that will help them make a difference in the world or connect to a valued identity, they are more likely to be motivated to stick with those tasks. For example, a college student who sees the connection between memorizing legal cases and her goal of going to law school to become a public defender will be more willing to repeatedly revisit such cases, even if it feels laborious or difficult.

In other words, students' mindsets *sustain* or *undermine* their sense of competence, their connection to others, and their perception that what they are doing is valuable when faced with challenges, uncertainty, or tedium.¹ Mindsets are thus key determinants of how people respond to the struggles and setbacks that are essential to the learning process and can be valuable opportunities for growth.

STUDENTS' MINDSETS SUSTAIN OR UNDERMINE THEIR SENSE OF COMPETENCE, THEIR CONNECTION TO OTHERS, AND THEIR PERCEPTION THAT WHAT THEY ARE DOING IS VALUABLE WHEN FACED WITH CHALLENGES, UNCERTAINTY, OR TEDIOUS.

Scientists have repeatedly shown that students' mindsets *causally affect* their motivation to engage in sustained learning behaviors, the quality of their learning strategies, and their learning outcomes, including grades, test scores, and persistence to graduation (see Figure 2).^{ix}

WHAT ARE THE KEY MINDSETS ABOUT LEARNING AND SCHOOL?

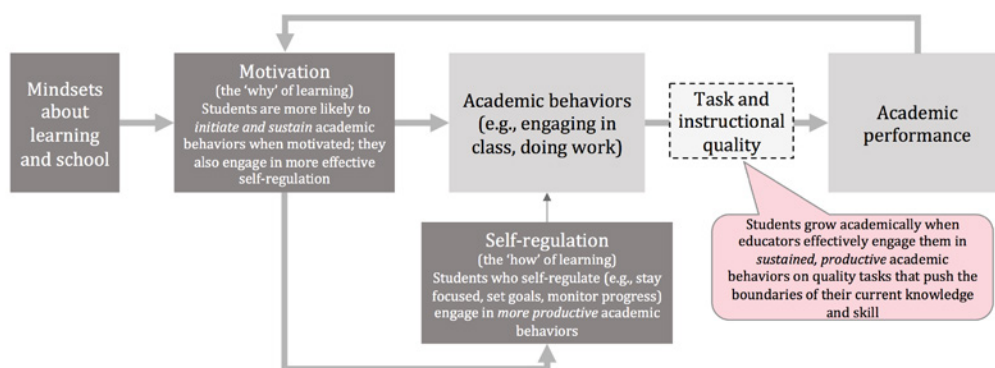
The key mindsets about learning and school relate to beliefs about belonging, intelligence, and the value of schoolwork.

Mindsets that undermine motivation: When students are aware that they may be judged negatively based on who they are, they are more likely to exert mental capacity looking for cues that people don't think they 'belong' in that environment. When students perceive that the people around them believe ability is a fixed trait, like eye color, they are more likely to worry about proving they are 'smart' (or avoiding looking 'dumb'). When the value of their schoolwork isn't clear, students are less likely to engage.

Mindsets that sustain motivation: By contrast, when students feel confident their instructors and peers value and respect them ([belonging](#)), they can focus attention on the work at hand.^{xi} When students' environment conveys to them that they can improve their ability if they apply effort and effective strategies (a ["growth" mindset about intelligence](#)), students are more likely to interpret new challenges as intrinsically rewarding opportunities to grow and experience competency.^{xii} When students see the connection between their schoolwork and their lives or a larger purpose ([relevance and purpose](#)), they are more likely to perceive tasks that are hard or tedious as worthwhile.^{xiii}

These adaptive behavioral responses set in motion positive, recursive processes between the individual and their environment that can lead to productive learning. People invest more in their own efforts when they believe they are capable; similarly, people invest more in others whom they perceive

Figure 2. Mindsets affect students' motivation, which influences the quality and persistence of students' learning behaviors and, in turn, their learning outcomes^a



Farrington et al., 2012

¹ To be clear, this is not an endorsement of boring schoolwork; however, many foundational skills require sustained, deliberate practice (e.g., becoming a musician requires practicing scales and etudes).

as capable.^{xiv} When students appear more engaged, instructors respond to them more positively; when students show greater proficiency over time, they are more likely to receive rigorous work and higher course placements.² When students sense they are respected by their peers and instructors, they are more likely to reach out and form relationships, which in turn strengthen their sense of belonging and engagement at school.^{xv}

Conversely, beliefs that lead students to disengage from productive learning behaviors spark negative, self-reinforcing cycles that lead to poorer learning and increased disidentification with school over time. When students worry that asking questions in class will make them look ‘dumb,’ they are less likely to seek help from their instructors or peers, which leads them to do worse and withdraw further; others perceive them as ‘unmotivated’ or ‘not caring about their education’ and withhold investment.

Education is one of the ultimate recursive processes. Past experiences shape future outcomes, and the mindsets through which students interpret their daily experiences at school are a powerful mechanism by which this dynamic plays out.^{xvi} Similarly, the lenses through which educators interpret students’ behavior are an important determinant of how they respond to students, too.^{xvii}

KEY MINDSETS

Belonging: Whether you believe you are valued and respected by your peers and instructors

Intelligence: Whether you believe you can grow your intelligence

Relevance and purpose: Whether you believe the work you are asked to do at school is relevant to your life or connected to a larger purpose beyond the self

MINDSETS ARE REASONABLE INFERENCES FROM THE SOCIAL ENVIRONMENT AND ARE SHAPED BY SYSTEMIC INEQUITIES IN SOCIETY

How do students develop the lenses through which they interpret what happens to them at school? From a young age, children begin to develop mindsets from countless observations of the world around them: from society, their families and other important adults in their lives, their peers, and the policies and practices they see enacted around them.

As natural learners, children are constantly reading between the lines to understand how the world sees them. This affects

the identities and goals they come to adopt, and the beliefs they develop. When we send children messages that we believe they belong in school, that they can excel, and that schoolwork is meaningful, they are more likely to develop mindsets about learning and school that sustain the inherent drive to learn with which they were born.

All children need to receive these positive messages. But some children are more likely to receive them because of long-standing inequities in our society that privilege certain groups. Students from wealthier communities, for instance, are more likely to attend well-resourced schools that provide a richer curriculum. White students, particularly white boys and men, are more likely to see people who look like them in instructional materials and positions of power.^{xviii}

WHEN WE SEND CHILDREN MESSAGES THAT WE BELIEVE THEY BELONG IN SCHOOL, THAT THEY CAN EXCEL, AND THAT SCHOOLWORK IS MEANINGFUL, THEY ARE MORE LIKELY TO DEVELOP MINDSETS ABOUT LEARNING AND SCHOOL THAT SUSTAIN THE INHERENT DRIVE TO LEARN WITH WHICH THEY WERE BORN.

Other children perceive a contrasting set of messages because they experience a different social reality as a member of a stigmatized group, or because they lack financial resources. These students are keenly aware of negative stereotypes in society and that they may be judged or evaluated as less capable.^{xix} A scarcity of people from their background in certain positions or a lack of economic opportunity convey that they have fewer options for the future.^{xx} Teachers may hold lower expectations for them and interact with them differently as a result (e.g., providing less feedback to incorrect responses).^{xxi} The curriculum and instruction to which they are exposed are less likely to reflect their community and cultural models, and may be more “rote-oriented” and less demanding.^{xxii}

The residue of these messages accrues over time, shaping the mindsets students come to hold, and influencing how they interpret future experiences. Some students have received messages for years that people like them have less intellectual aptitude. They must always contend with the worry that people might judge them negatively because of who they are, or that they don’t have what it takes. Other students have the privilege to learn free of this additional weight.^{xxiii} These are the respective lenses through which students interpret challenges and setbacks, whether it is critical feedback on an essay or being stopped in the hallway by a teacher. A white student may see these experiences as innocuous, for instance, while

²It is important to note that students of color are less likely than white students of similar academic qualifications to be recommended by teachers for ‘gifted and talented’ placements (e.g., Grissom & Redding, 2016).

an African American student may reasonably worry about whether they are being evaluated differently. These divergent interpretations shape their responses and their experiences of school.

STUDENTS' MINDSETS CAN CHANGE WHEN WE CHANGE THE MESSAGES WE SEND THEM

Research has demonstrated that mindsets are malleable—they are not fixed traits.^{xxiv} This is crucial because when people experience challenges and setbacks differently, they respond differently in turn. This can set off a self-reinforcing cycle of adaptive beliefs, behaviors, and outcomes that can put them on a new learning trajectory.

Over the past several years, scientists have shown that it is possible for students to develop different mindsets when they participate in exercises that can be delivered with fidelity to massive numbers of students online.^{xxv} These psychological interventions are precisely targeted to spark positive recursive cycles that encourage different mindsets to take hold over time.³ Studies have shown that carefully-designed mindset interventions can reduce achievement gaps by improving the performance of students who have struggled academically or who face negative stereotypes about their group's intellectual ability.^{xxvi} Critically, the academic environment must afford the possibility of improvement: sufficient resources (e.g., quality instruction) must be in place for these intervention effects to bear out over time.^{xxvii}

Such interventions are important because many students are faced with learning environments in which the messages they receive may not support adaptive mindsets. The interventions can thus trigger a critical 'buffer' for low-performing students and those who contend with negative stereotypes about their ability. These interventions do not eliminate the need to make changes to learning environments that send harmful messages to students but they are an important resource today for students who must face such environments on a daily basis. Moreover, such interventions can provide insights as to how environments can be changed to greatest effect.

Scientists also hypothesize that interventions that target students' mindsets can make students more attuned to positive messages in the environment where they do exist. For example, if students have been primed through a psychological intervention to understand that one's intellect can grow, they may be more likely to pick up on growth-aligned instructional practices (e.g., encouraging revisions).^{xxviii}

But interventions designed by scientists aimed at students'

mindsets are just the tip of the iceberg. Everything we do in schools conveys explicit and implicit messages to students that shape the mindsets they hold. The environments educators create in schools in collaboration with families and integrated community partners can be 'motivating' or 'demotivating' in their design. We can sustain people's natural drive to learn—or we can undermine it.

THE ENVIRONMENTS EDUCATORS CREATE IN SCHOOLS IN COLLABORATION WITH FAMILIES AND INTEGRATED COMMUNITY PARTNERS CAN BE 'MOTIVATING' OR 'DEMOTIVATING' IN THEIR DESIGN. WE CAN SUSTAIN PEOPLE'S NATURAL DRIVE TO LEARN—OR WE CAN UNDERMINE IT.

Students develop more adaptive mindsets when we intentionally craft learning environments that reinforce the messages that students belong, that they can get smarter, and that their schoolwork is personally meaningful. Such messages leave behind layers of positive psychological residue that contribute to the mindsets students develop. Creating such environments is critical for all students, but particularly for those from groups that have been marginalized and negatively stereotyped in academic contexts, including students of color, English language learners, students with learning differences, first-generation college students, and women and girls in STEM.

Such messages are relevant beyond their contribution to the beliefs that students come to acquire over time. These cues can also trigger in students more (or less) adaptive mindsets in a particular school or classroom context. Consider, for example, a woman taking an advanced chemistry course in college. She is likely to be aware of negative stereotypes about women's ability in the physical sciences and will be vigilant for signs that her peers or instructor think she doesn't belong or can't succeed. If her instructor conveys that all students are capable of excelling in the course with the right strategies and support, she will be less likely to question whether she belongs in the course and can master the material. When she comes up against a challenging problem or gets a low exam grade, she will feel capable of bouncing back and be more likely to reach out for help. In contrast, if the instructor begins the semester saying that "half of you will earn Ds or Fs" and imploring students not to ask "dumb questions," this will likely dissuade her from seeking the support she needs to succeed.^{xxix}

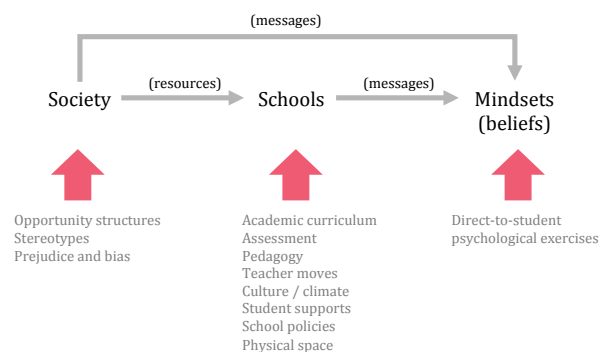
In sum, it is possible to intervene at three points to change the messages students perceive and the mindsets they come

³ Social psychological interventions target beliefs that shape how people interpret their experiences. This can set off a "snowball" effect: the new interpretation changes their response to subsequent experiences, the outcomes of which then reinforce the new belief; this recursive cycle picks up steam over time (Walton, 2014, p. 79). For example, as students become more confident they belong in school, they build stronger relationships with their peers and instructors, who become ongoing sources of support and bolster students' success over time (Yeager & Walton, 2011). Importantly, this snowball effect depends on the extent to which certain educational resources are present in the environment. While similarly brief in duration, 'nudge' interventions often operate via a somewhat different mechanism: they change the structure of situations (e.g., changing the default option, sending a timely reminder) to make certain behaviors in that specific context more likely. These changes may not generalize to other situations (Walton & Wilson, under review).

to hold (see Figure 3). We can change the opportunity structures, stereotypes, prejudice, and bias students experience in society. We can modify our educational practices and policies to change the messages students receive in school.⁴ And we can intervene at the student level with precise interventions designed by scientists to reorient students to more adaptive mindsets. These options are not mutually exclusive but complementary opportunities to help remedy educational and societal inequity.

It is important to emphasize that this is not an ‘either/or’ choice. It is necessary to make long-term, systemic changes to aspects of schools and society that perpetuate unequal educational outcomes in part by sending disparate messages to students that shape their motivation in school. It is also imperative today to use scientific knowledge about how interventions can change students’ mindsets responsibly and reliably to improve the experience of current students who might benefit from such immediate supports. Failing to do so would be akin to denying individuals who face significant adversity access to effective services that could help them lead healthier lives until all sources of adversity are eradicated—the ultimate societal goal.

Figure 3. There are multiple points of intervention to change the messages students receive and the mindsets students hold



RETOOLING EDUCATION TO ALIGN WITH INSIGHTS FROM MINDSET SCIENCE HAS THE POTENTIAL TO NURTURE THE INHERENT DRIVE TO LEARN WITH WHICH PEOPLE ARE BORN

Motivation is a critical determinant of how much and how deeply people learn.⁵ But the typical design of schooling reflects a time when we had less scientific understanding about how motivational processes shape cognition and where

the motivation to learn comes from. Some of this knowledge has validated popular notions about motivation (e.g., tasks that are novel and varied spark greater interest), while other insights run counter to widespread beliefs and practices (e.g., rewards, evaluations, and punishments can undermine deeper learning because they imply that people must require bribery or threats to engage in the task, and they focus people on achieving the outcome rather than the process).^{xxx}

For example, developmental scientists have observed that as students age, the typical design of schooling becomes increasingly out of sync with our understanding of adolescents’ motivational needs.^{xxi} Adolescents become more sensitive to social comparison and signals of respect, more capable of taking on abstract, conceptual thinking, and need different kinds of relationships with caring adults.^{xxxii} Yet secondary schools increasingly rely on summative evaluation and ranking, apply zero-tolerance policies that undermine respect, assign less challenging work, and become more impersonal as students rotate through multiple teachers each day.^{xxxiii} Perhaps unsurprisingly, students report declining levels of intrinsic motivation beginning in middle school and continuing into high school.^{xxxiv}

THE TYPICAL DESIGN OF SCHOOLING REFLECTS A TIME WHEN WE HAD LESS SCIENTIFIC UNDERSTANDING ABOUT HOW MOTIVATIONAL PROCESSES SHAPE COGNITION AND WHERE THE MOTIVATION TO LEARN COMES FROM.

Guiding principles gleaned from scientific research on motivation can help practitioners and policymakers adjust educational policies, school designs, instructional practices, and academic tasks to enhance student engagement in learning.⁶

Research suggests that learning environments that are inclusive, growth-oriented, and meaningful are more likely to sustain the inherent curiosity and desire to learn with which we are born. Table 1 summarizes design principles extracted from four decades of behavioral and social science research about the features of such learning environments. These principles speak to what is taught, how it is taught, who teaches it, and the context in which it is taught. Notably, similar principles are also likely to sustain educators’ professional motivation to continuously improve their instructional practice and build their collective capacity to create collaborative, purposeful environments for teaching and learning.

⁴ In this brief, we are focused primarily on educational institutions but families and other actors in students’ lives outside of school are also important sources of these messages (e.g., [Haimovitz & Dweck, 2016](#); [Moorman & Pomerantz, 2010](#); [Gunderson et al., 2013](#)).

⁵ It is important to note that motivation is critical to becoming an effective, self-directed learner, but it is insufficient on its own. Students can be motivated to learn but not have the knowledge, meta-cognitive skills, or learning strategies necessary to put that motivation ‘to work.’

⁶ Leading practitioners and R&D organizations are already engaged in this work in K-12 and higher education. R&D organizations like the [Carnegie Foundation for the Advancement of Teaching](#), [College Transition Collaborative](#), [Motivate Lab](#), [Perception Institute](#), [PERTS Lab](#), [University of Chicago Consortium on School Research](#), and [others](#) are working with practitioners to create tools and practices that draw on mindset science to design learning environments that nurture people’s motivation to learn.

Table 1. Design characteristics of K-16 learning environments that nurture people's motivation to learn

LEARNING ENVIRONMENTS THAT ARE INCLUSIVE ARE...

Relationship-centered: They adopt routines and practices that foster trust and encourage sustained, developmentally-supportive relationships among students and educators inside and outside the classroom^{xxxvi}

Cue-conscious: They ensure visual cues convey to students that people like them belong and are expected to excel.^{xxxvii}

- They attend to issues of representation: Students see peers and role models of similar backgrounds and identities in all advanced courses, disciplines, and instructional positions
- They pay attention to the images present in the physical environment: They consider what images (e.g., posters, artwork) in the classroom and school convey about who belongs and is successful
- They are safe and well-resourced: The physical setting conveys to students their education is valued

Transition-supportive: They signal that integrating into a new learning community is a process and that 'difference' is a valued asset that can contribute to students' success (e.g., transition programming foreshadows potential challenges and strengths students bring)^{xxxviii}

Pedagogically-inclusive: They ensure curriculum and instruction value students' identities and reflect their cultural models, and include all students in academic work and discourse in meaningful ways^{xxxix}

Exclusion-mindful: These environments remedy policies and practices that undermine students' sense of inclusion and situations that create barriers to belonging:^{xl}

- They remedy policies and practices that exclude, stigmatize and shame, preserve racial / ethnic and cultural dominance, perpetuate stereotypes, and undermine perceived fairness and due process (e.g., many forms of tracking; discipline policies; messaging surrounding academic probation and remediation)
- They attend to exclusionary language (e.g., language used to describe families, gender identity, sexuality, ability status, race, ethnicity, and immigration status; mispronunciations of students' names)
- They address barriers to participation that could undermine students' sense of belonging in the learning environment (e.g., lack of access to food, shelter, safety, and healthcare; inability to pay for school supplies; financial or academic barriers to participate in extracurricular activities; family time, language barriers, or administrative hassles that make it difficult for families to be involved in school)

LEARNING ENVIRONMENTS THAT ARE GROWTH-ORIENTED ARE...

Conceptually-focused: They focus curriculum and instruction on conceptual understanding and prioritize depth over breadth in coverage^{xli}

Challenge-supportive: They create conditions for optimal challenge (difficult but not impossible given the student's skill level) and enable all students to experience meaningful growth in a challenging curriculum:^{xlii}

- They hold all students to high standards and design challenging, open-ended tasks that students at different levels of mastery can all access
- They provide differentiated supports that equip students to meet challenges and maintain a sense of efficacy and competence—positioning learning as a collaborative enterprise with collective responsibility among students, their peers, and educators
- They do not give "comfort-oriented feedback" (e.g., consoling students that people may struggle in this domain but can succeed in others or that "not everyone is a math person," or assigning less work)

Mastery-oriented: They normalize mistakes as central to learning, make it safe to take risks, focus on competency over seat-time, encourage feedback and revision, and reframe assessments as resources for improvement and development of mastery^{xliii}

Process-focused: They focus feedback (responses, criticism, and praise) and assessment on process over accuracy or speed, and make explicit the connections between students' process and their outcomes^{xliv}

Comparison-mindful: They consider the messages that competition, ranking, grouping, grading, or labeling practices and policies could send students about their ability to grow intellectually^{xlv}

LEARNING ENVIRONMENTS THAT ARE MEANINGFUL ARE...

Future-oriented: They engage in practices that convey to students that a range of personally motivating future goals and "possible selves" are available and that students will be supported in achieving them^{xlvi}

Agency-supportive: They provide students with regular opportunities to have voice and agency (express their authentic self, make choices that are meaningful to them, and be a source of action), collectively or individually^{xlvii}

Engagement-driven: They provide schoolwork designed to sustain interest and engagement:^{xlviii}

- Tasks and assessments are engaging (authentic, collaborative, problem-oriented, challenging, novel, varied, open-ended, sensory, cooperative, requiring active meaning-making, prosocial, and utilizing resources outside school) and perceived as valuable (relevant to students' interests and goals)
- They consider the potential negative effects of extrinsic motivators (evaluation, reward, punishment) and controlling / autonomy-undermining behaviors (e.g., instructors monopolizing discourse, focusing on commands and compliance, telling students the right answer instead of giving time to discover it) on students' engagement and their desire to learn

Connection-themed: They provide curriculum, tasks, and leadership opportunities that encourage students to connect what they are learning with their lives, identities, communities, and a self-transcendent purpose

MOTIVATION IS CORE TO LEARNING—NOT AN ADD ON— AND WE CAN CREATE ENVIRONMENTS THAT FOSTER IT

Rigorous scientific evidence shows that motivation is a vital psychological process that makes possible humans' evolutionary predisposition to learn and develop. It drives people to seek out new knowledge and skills. The environments we create in schools and classrooms can support or weaken this natural desire to learn.

A key insight from the science of motivation is that how students make meaning of their experiences at school can sustain or undermine their sense of competence, their connection to others, and the perceived value of tasks when encountering challenges and setbacks that are inherent to the learning process. These mindsets are thus critical determinants of students' motivation and their ability to successfully master rigorous academic content and become life-long learners. This is especially true for students from under-represented and marginalized groups who have disproportionately received messages that they are less capable.

A robust and growing body of research provides scientific warrant to a set of principles that can help educators and practitioners design environments that nurture people's natural desire to learn—and it can help the field know what to look for in surfacing promising innovations from practice. Cultivating schools and classrooms aligned with insights from mindset science is essential to realizing an equitable educational system that provides an engaging, enriching experience for all students and educators.

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- ⁱ Silvia, 2008.
ⁱⁱ Larson & Rusk, 2011.
ⁱⁱⁱ Immordino-Yang, 2016.
^{iv} Deci & Ryan, 2000; Furrer, Skinner, & Pitzer, 2014; Baumeister & Leary, 1995.
^v Wigfield et al., 2015; Carr & Walton, 2014; Master, Cheryan, & Meltzoff, 2017; Butler & Walton, 2013.
^{vi} Dittman & Stephens, in press; Yeager & Walton, 2011.
^{vii} Walton & Wilson, under review.
^{viii} Walton & Wilson, under review.
^{ix} Aronson, Fried, & Good, 2002; Blackwell, Trzesniewski, & Dweck, 2007; Good, Aronson, & Inzlicht, 2003; Jamieson et al., 2010; Murphy & Zirkel, 2015; Sherman et al., 2013; Walton & Cohen, 2011; Yeager et al., 2014.
^x Farrington et al., 2012.
^{xi} Walton & Cohen, 2011.
^{xii} Blackwell, Trzesniewski, & Dweck, 2007.
^{xiii} Hulleman & Harackiewicz, 2009; Yeager et al., 2014.
^{xiv} Walton & Wilson, under review.
^{xv} Walton & Wilson, under review.
^{xvi} Walton, 2014.
^{xvii} Okonofua, Paunesku, & Walton, 2016.
^{xviii} Banks et al., 2005.
^{xix} Steele & Aronson, 1995; Reyna, 2000.
^{xx} Zirkel, 2002; Oyserman & Fryberg, 2006.
^{xxi} Gershenson, Holt, & Papageorge, 2016; Brophy & Good, 1970; Ferguson, 2003; Tenenbaum & Ruck, 2007.
^{xxii} Paris, 2012; Fryberg & Markus, 2007; Banks et al., 2005, p. 239.
^{xxiii} Notably, dramatic reductions in achievement gaps have been observed in both K-12 and postsecondary contexts when researchers have alleviated these disparately experienced psychological burdens in randomized controlled trials. See for example, Yeager, Purdie-Vaughns et al., 2014; Walton & Cohen, 2011; Yeager, Walton, et al., 2016; Walton, Logel, et al., 2015.
^{xxiv} Walton & Wilson, under review.
^{xxv} Paunesku et al., 2015.
^{xxvi} Cohen et al., 2009; Paunesku et al., 2015; Stephens et al., 2014; Yeager, Walton, et al., 2016;

- Walton & Cohen, 2007; Walton & Cohen, 2011.
^{xvii} Walton, 2014.
^{xviii} Yeager et al., in prep.
^{xxix} Murphy, 2015.
^{xxx} Ames, 1992; Lepper, Corpus, & Iyengar, 2005; Larson & Rusk, 2011; Deci, Koestner, & Ryan, 1999.
^{xxxi} Eccles et al., 1993.
^{xxxii} Yeager, Dahl, & Dweck, 2017; Eccles et al., 1993.
^{xxxiii} Yeager, 2017; Yeager, Dahl, & Dweck, 2017; Eccles et al., 1993.
^{xxxiv} Wigfield et al., 2015.
^{xxxv} Fullan, 2011; Fullan & Quinn, 2016.
^{xxxvi} Goodenow, 1993; Gehlbach et al., 2016; Eccles & Roeser, 2009; Furrer, Skinner, & Pitzer, 2014; Lee, Smith, Perry, & Smylie, 1999; Reeve, 2006.
^{xxxvii} Murphy, Steele, & Gross, 2007; Dee, 2004, 2005; Gershenson et al., 2016, 2017; Cheryan et al., 2009.
^{xxxviii} Stephens, Hamedani, & Destin, 2014; Walton & Brady, 2017; Walton & Cohen, 2011; Yeager et al., 2016; Walton et al., 2015.
^{xxxix} Dee & Penner, 2016; Carr & Walton, 2014; Cohen & Lotan, 2014; Paris, 2012; Boaler & Staples, 2008; Fryberg & Markus, 2007; Stephens et al., 2012.
^{xl} Brady, Fotuhi et al., in prep.; Okonofua, Paunesku, & Walton, 2016; Marks, 2000; Newmann, 1992; Kohli & Solórzano, 2012.
^{xli} Ames, 1992; Sun, 2015.
^{xlii} Ames, 1992; Yeager, Purdie-Vaughns et al., 2014, 2017; Ferguson et al., 2015; Cohen & Lotan, 2014; Boaler & Staples, 2008; Lepper & Woolverton, 2002; Rattan, Good, & Dweck, 2012.
^{xliii} Ames, 1992; Smeding et al., 2013; Linnenbrink, 2005; Haimovitz & Dweck, 2016; Sansone & Harackiewicz, 2000; Brophy, 2014.
^{xliii} Mueller & Dweck, 1998; Yang-Hooper et al., 2016; Park et al., 2016; Cimpian et al., 2007.
^{xlv} Maehr & Midgley, 1996; Sun, 2015; Eccles & Roeser, 2009; Boaler, William, & Brown, 2000; Ames, 1992.
^{xlv} Destin, 2017; Destin & Oyserman, 2009; Oyserman & Fryberg, 2006; Browman, Destin, Carswell, & Svoboda, 2017.
^{xlv} Ryan & Deci, 2000; Ames, 1992. Note: Students who possess more interdependent cultural models of the self may be more motivated when someone important to them makes choices for them, see Iyengar & Lepper, 1999.
^{xlv} Ames, 1992; Larson & Rusk, 2011; Csikszentmihalyi, 1990; Eccles, 2005; Newmann, 1992; Marks, 2000; Hidi & Renninger, 2006; Sansone & Harackiewicz, 2000; Shernoff, Csikszentmihalyi, Schneider, & Shernoff, 2003; Hulleman, Durik, Schwegert, & Harackiewicz, 2008; Grant, 2007; Grant, 2008; Master, Cheryan, & Meltzoff, 2017; Carr & Walton, 2014; Silvia, 2008; Reeve, 2006; Reeve & Jang, 2006.
^{xlv} Dee & Penner, 2016; Diekmann et al., 2010, 2011; Hulleman & Harackiewicz, 2009; Yeager et al., 2014; Cohen et al., 2009; Miyake et al., 2010. Note: As explained in Yeager et al., 2014, adults should not tell students (particularly adolescents) what their purpose for learning should be. Also, students from cultures that hold interdependent norms have been found to endorse more "interdependent motives" for pursuing education (e.g., giving back to their community, being a role model, helping their family, showing that people with their background can do well), see Stephens et al., 2012.

MINDSET SCHOLARS NETWORK OVERVIEW

The Mindset Scholars Network is an interdisciplinary community devoted to improving learning and expanding educational opportunity by advancing our understanding of how students' psychological experience of learning and school influences their academic outcomes.

The 40 [scholars](#) who comprise the Mindset Scholars Network represent 23 institutions across the United States. In addition to conducting original research, most scholars teach graduate and undergraduate courses and many have taught in K-12 classrooms. The scholars are experts in a wide range of disciplines, including computer science, economics, education, neuroscience, psychology, sociology, and statistics. Together, their diverse theoretical and methodological perspectives uniquely position this community to study how students' perceptions of themselves and their experiences are shaped by their identities and contexts, and how those perceptions matter for their academic motivation, behaviors, and outcomes.

WHAT ARE LEARNING MINDSETS?

[Mindsets are the lenses through which students interpret their experiences in school.](#) These interpretations, in turn, shape their responses to those experiences, particularly to challenges. Mindsets are thus key determinants of how people respond to struggles and setbacks that are essential to the learning process. When students believe that they belong at school (**belonging**), that they can get smarter (**growth mindset**), and that their schoolwork is connected to their lives and a larger purpose (**relevance & purpose**), they are more likely to choose challenging tasks, persist in the face of difficulty, learn more deeply, and achieve at higher levels.

Decades of research has shown that [environments play a critical role in shaping students' mindsets](#). Beginning at a young age, children develop mindsets about learning and school from countless observations of the world around them: from society, from peers, from important adults in their lives, and from institutional policies and practices they see enacted. As natural learners, children constantly read between the lines to understand how the world sees them. Mindsets are reasonable inferences that reflect students' reality.

When students perceive messages from the environment that they belong in school, that they can grow their ability and excel, and that their schoolwork is meaningful, they are more likely to develop mindsets that bolster their drive to learn in the face of challenges that have the potential to sap motivation. Everyone needs to receive these positive messages. But some students are more (or less) likely to receive them because of long-standing structural inequalities in our society that advantage certain groups and disadvantage others.

WHAT DOES THE MINDSET SCHOLARS NETWORK DO?

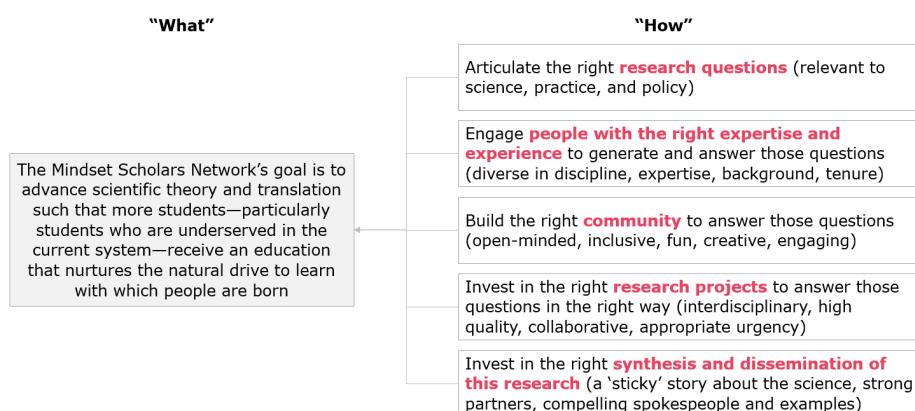
The Mindset Scholars Network was incubated at Stanford University's Center for Advanced Study in the Behavioral Sciences in 2015 and is now an independent project of New Venture Fund, a 501(c)(3) public charity. The network was founded with four key aims: (1) to advance interdisciplinary mindset science in ways that are useful to research, practice, and policy; (2) to communicate useful scientific knowledge that quickly reaches stakeholders and helps improve the outcomes of today's students; (3) to refine a new model for interdisciplinary scholarly collaborations in the social sciences that are rigorous, transparent, and practically relevant; and,

(4) to establish mindset science as an important, permanent element of education research and systemic change.

The network accomplishes these aims by:

- **Investing in cross-disciplinary research projects that are timely and relevant:** issuing RFPs that advance the network’s interdisciplinary research agenda; providing support to launch large-scale studies; and bringing questions from practitioners to the research community.
 - Examples: [Learning environment research portfolio](#) of 14 projects; [National Study of Learning Mindsets](#) (NSLM); [College Transition Collaborative](#)
- **Providing leadership to the scientific community:** making data and other research assets available for broader use; issuing consensus statements; and cultivating the next generation of scholars committed to interdisciplinary scholarship on mindsets.
 - Examples: Collaborating with the University of Texas at Austin’s Population Research Center to host the [NSLM Early Career Fellowship](#) and create a permanent, public home for the NSLM data; curating a searchable [online library](#) of mindset publications
- **Conducting outreach to education stakeholders:** synthesizing the latest research and its implications for practice and policy, and advising organizations (e.g., sector media, intermediaries, funders) and thought leaders on issues related to mindset science.
 - Examples: Issuing [briefs](#) and other research summaries for lay audiences; maintaining a [social media presence](#) and [blog](#) on developments in mindset science; hosting events that convene researchers and education stakeholders; advising intermediary organizations, funders, journalists, product developers, and others on mindset science; conducting research projects on how education stakeholders are using this body of research in practice

The figure below depicts the Mindset Scholars Network’s working hypothesis about how its activities further its overarching goal of advancing scientific theory and translation such that more students—particularly those who are underserved in the current system—receive an education that nurtures the natural drive to learn with which people are born.



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Addressing Belonging to Improve College Achievement: The Social Belonging Intervention

The Problem

Despite enormous investments by institutions of higher education to provide academic and financial supports to their students, four out of 10 new 4-year college students do not graduate within six years. Completion rates are even lower for students of color, first-generation college students, and students from low income backgrounds.

Many students enter college motivated and able to succeed. Yet far too many fail to thrive. Why? And what can we do to improve outcomes?

The Role of Belonging in College

Although many factors contribute to the complex problem of college achievement, a linchpin for students involves a sense of belonging. **If students do not develop a sense of belonging in their college community, they are unlikely to thrive.** Yet when students go to college, they are typically uprooted from their family and high school community to enter a new and, for many students, vastly different social world. They must develop new friendships, learn new ways of interacting with instructors, find mentors, and identify academic supports to succeed in a different and challenging academic environment.

All students face challenges in the transition to college that can lead them to question their personal belonging in this environment. But students from backgrounds that are **disadvantaged** in higher education--such as being part of a racial minority group on campus, or being the first member of their family to attend college--can wonder, in addition, whether a "person like me" can belong or succeed in college¹. A consequence of this experience, termed **belonging uncertainty**, is that, when students encounter common difficulties in the transition to college--like feelings of loneliness or receiving negative academic feedback--these difficulties can seem like proof that they don't belong or can't succeed on campus. That inference can cause students to withdraw, and become self-fulfilling.

Worries about belonging are highly predictive of post-secondary achievement, above and beyond other prominent factors. In one study of graduates of urban charter schools, almost all African American and first-generation, worries about belonging in college assessed at the end of high school (e.g., "Sometimes I worry that I will not belong in college") predicted lower rates of progress through the first year, above and beyond SAT scores, high school GPA, fluid intelligence, growth mindset, grit, and eight other individual-difference measures². Among academically prepared students, worries about belonging predicted worse achievement.

The Social-Belonging Intervention: Representing Common Challenges in the Transition to College as Normal and as Improving with Time

The social-belonging intervention aims to interrupt pejorative interpretations of common challenges in college by giving students a different narrative: An understanding that such challenges are normal at first for all students in the transition, do not mean that one does not belong, and get better with time. To share this message, the intervention uses carefully written stories from diverse older students to convey that worries about belonging in a new school--about interacting with peers, joining study

¹ Walton & Brady, 2019.

² Yeager, Walton, et al., 2016; for similar findings, see Goyer et al., in prep; Gopalan & Brady, in prep.

groups, talking with instructors, etc.--are common at first but dissipate with time as students reach out to others and, with time, come to feel at home. This message provides students a more adaptive narrative with which to understand common adversities they experience: namely, that they are normal and can be overcome.

The intervention is an interactive exercise, usually lasting an hour or less, to convey these themes effectively. These include exposure to social norms—challenges and feelings of nonbelonging are represented as typical and as typically improving—and a component called **saying-is-believing** in which students write about how the process of change described has played out in their own experience so far and/or how they anticipate it will play out going forward³. They often do so in a letter to a future student in an effort to help that future student in his or her transition. That way participating students (1) actively engage with the ideas, increasing learning; (2) connect abstract ideas to their own experience, increasing personal relevance; (3) advocate for these ideas to others, a powerful means of persuasion; and (4) understand themselves as helping others, not as receiving help, taking on an empowering rather than a potentially stigmatizing role.

The intervention aims to get students out of a **yes/no fixed** mindset in which daily experiences appear as evidence for or against their belonging in school and into a **process mindset** where they understand belonging as a process that develops over time and one over which they have some control.

Evidence of Effectiveness

The social-belonging intervention has been shown to improve core academic outcomes for students who face negative stereotypes and underrepresentation in diverse intellectual environments. Early studies delivered the intervention to relatively small samples in dedicated in-person sessions so as to maximize impact and understand effects. Later studies have tested means of scaling to large samples, and effectiveness when this was done. Although achieving scale can involve compromises that reduce impact, doing so allows a test of whether the intervention can move the educational outcomes at levels meaningful to institutions and to society.

Context	Implementation	Primary Outcomes
<i>In person delivery</i>		
Highly selective college (Walton & Cohen, 2011)	1-hour in-person one-on-one session (N=92)	Cut the racial achievement gap in GPA from sophomore through senior year by half ; increased life and career satisfaction in adulthood for African Americans
Large public university, STEM students (Walton, Logel et al., 2015)	45-60 minute in-person small-group session (N=228)	Raised women's engineering GPA over the first academic year, eliminating gender differences in STEM performance.

³ Aronson, 1999.

Large public, broad-access institution (Murphy et al., in prep)	1-hour meeting of first-year writing class (N=1,063)	Increased the percentage of minority and first-gen students who maintained continuous full-time enrollment over two years by 9 percentage points .
Online Delivery		
Graduates of urban charter school networks (Yeager, Walton, et al., 2016 Expt. 1)	30-minute online session in May of students' senior year of high school (N=584)	Raised first-year full-time enrollment rate for predominantly African American and first-gen students from 32% to 43% .
Large public selective university (Yeager, Walton, et al., 2016 Expt. 2)	30-minute online session over the summer before entering college (N=7,418)	Reduced the gap in first-year full-time completion with nonminority, continuing generation students by 40% .
Selective private university (Yeager, Walton, et al., 2016 Expt.3)	30-minute online session over the summer before entering college (N=1,596)	Reduced the gap in first-year GPA with nonminority, continuing generation students by 31% .

Additional studies have shown the intervention to raise achievement in massive open online courses (MOOCs)⁴ and among students in the transition to middle school⁵.

The CTC Trial: Scaling, Heterogeneity, and Customization across 20+ Campuses and 40,000+ Students

The social-belonging intervention *can* improve college achievement and reduce inequalities, when delivered at scale. But *how* can we use the intervention most effectively? Specifically, the CTC trial was designed to address three primary questions:

- **Can we develop partnerships with diverse postsecondary institutions to deliver the intervention to large numbers of incoming first-year students?**
- **In what kinds of postsecondary contexts is the intervention most effective, especially for students from socially disadvantaged groups?**
- **Does it enhance effectiveness to customize intervention content at each school, using a design process?**

⁴ Kizilcec et al., 2017.

⁵ Borman et al., 2018; Goyer et al., 2018; Walton & Brady, 2019.

CTC developed partnerships with more than 20 campuses to deliver the intervention, on a randomized basis, to incoming first-year students over two years (i.e., cohorts), in the summer of 2015 and the summer of 2016. More than 40,000 students took part.

The intervention was delivered in a 30-minute online session in the summer before students entered college. There were three conditions:

1. A control condition that emphasized how students get used to the physical environment of college over time.
2. A standard treatment condition that emphasized how it is normal to worry at first about belonging in college and this improves with time.
3. A customized treatment condition based on the standard treatment but customized following a design process at each school to address campus-specific challenges to belonging.

In each condition, students read stories from older students reflecting the key theme, a brief saying-is-believing writing activity in which they reflected on the themes they read about, and a short survey.

In the spring of students' first-year of college, a sample of students at each institution were invited to complete a survey describing their experiences, attitudes, and behaviors.

Sample

Key Characteristics of Partner Institutions

	Type	Carnegie Classification	Location	Implementation
School 1	Private	Doctoral Universities: Highest Research Activity	Northeast	2015, 2016
School 2	Private	Doctoral Universities: Highest Research Activity	Northeast	2015, 2016
School 3	Public	Doctoral Universities: Moderate Research Activity	Midwest	2015, 2016
School 4	Public	Doctoral Universities: Highest Research Activity	Midwest	2015, 2016
School 5	Private	Baccalaureate Colleges: Arts & Sciences Focus	West	2015, 2016
School 6	Public	Master's Colleges & Universities: Larger Programs	West	2015, 2016
School 7	Public	Doctoral Universities: Highest Research Activity	West	2015, 2016
School 8a	Private	Baccalaureate Colleges: Arts & Sciences Focus	Midwest	2015, 2016
School 8b	Private	Baccalaureate Colleges: Arts & Sciences Focus	Midwest	2015, 2016
School 8c	Private	Baccalaureate Colleges: Arts & Sciences Focus	Midwest	2015, 2016
School 8d	Private	Baccalaureate Colleges: Arts & Sciences Focus	Midwest	2015, 2016
School 8e	Private	Baccalaureate Colleges: Arts & Sciences Focus	Midwest	2015, 2016
School 8f	Private	Baccalaureate Colleges: Arts & Sciences Focus	Midwest	2016
School 8g	Private	Baccalaureate Colleges: Arts & Sciences Focus	Midwest	2016
School 8h	Private	Baccalaureate Colleges: Arts & Sciences Focus	Midwest	2016
School 9	Public	Doctoral Universities: Highest Research Activity	Midwest	2015, 2016
School 10	Public	Master's Colleges & Universities: Larger Programs	West	2015, 2016
School 11	Public	Master's Colleges & Universities: Larger Programs	South	2015, 2016
School 12	Private	Doctoral Universities: Highest Research Activity	Northeast	2015, 2016
School 13	Public	Master's Colleges & Universities: Larger Programs	West	2016
School 14	Public	Doctoral Universities: Highest Research Activity	West	2016

Note: Schools 8a-8h are part of the same network of institutions; the customized social-belonging condition was the same for all institutions in this network.

Study Outputs

1. **Dataset for understanding impact and heterogeneity across contexts, to become available to new researchers**

This dataset will be an invaluable resource for studying belonging in postsecondary institutions. CTC seeks to increase the awareness, interest, and usage of the data among social scientists to raise the overall impact of the study, and to have independent reproductions of the main study findings by other members of the scientific community beyond those who developed the intervention.

2. **Publicly available, evidence-based tool to facilitate adaptive mindsets about belonging in college**

CTC has partnered with the Project for Education Research that Scales (PERTS) to make a standardized version of our social-belonging materials available for schools on a free, easy-to-use, online platform since 2017. To date, this version has reached over 39,000 students across more than 60 institutions.

Additionally, there are many ways institutions can convey adaptive ways of thinking about belonging and build a school culture that supports this. Several university leaders have incorporated the insights from this intervention into their other student success initiatives and campus-wide messaging. As one partner noted, “we’ve employed this insight in our academic standing letters, messaging around early alerts, and institutional marketing. I see opportunities to apply insight farther with our underserved and ‘disadvantaged’ student populations.”

Social Belonging Intervention Research Team

Principal Investigators & CTC Founders:

Greg Walton, Stanford University

Mary Murphy, Indiana University

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David Yeager, University of Texas at Austin

CTC would also like to acknowledge the contributions of the [CTC Research Fellows](#) and Parker Goyer (statistical analysis).

Mindsets and the Learning Environment: Evidence from Half a Million Students on the Importance of Belonging in Schools

BY JESS HENNESSEY

RESEARCH SNAPSHOT | SUMMER 2018

Schools and teachers shape students' feelings of belonging, which matters for many important outcomes. For example, students who feel they belong and are valued by their teachers and peers are able to engage more fully in learning. This study examines how self-reported sense of belonging in school is related to gains in a range of student test and non-test outcomes.

The project, led by Matthew Kraft, leveraged a large sample of students in the California CORE districts to examine how feelings of belonging in school affect academic, behavioral, and social-emotional experiences and outcomes. The size and diversity of the sample allowed the research team to explore whether levels of self-reported belonging and relationships between reported belonging and later outcomes vary by students' race/ethnicity and gender.

STUDY DESIGN

The researchers used data that were collected over three years (from 2014-2017) on students attending five of the largest participating CORE districts, totaling more than 600,000 students from over 1,000 schools.

The data contained measures of students' self-reported levels of belonging using the following four questions:

- I feel close to people at this school
- I am happy to be at this school
- I feel like I am part of this school
- I feel safe in my school

Students were surveyed on their self-reported feelings of belonging. The researchers also collected data on academic, behavioral, and social-emotional outcomes to examine their relationship with belonging (see Table 1).

KEY FINDINGS

- There are large disparities in students' self-reported sense of belonging by racial/ethnic group and gender
- Self-reported belonging correlates with a host of other psychologically adaptive and prosocial beliefs
- Increases in students' self-reported sense of belonging in school were positively related to gains in academic and behavioral outcomes

RESEARCH TEAM

- [Matthew Kraft](#) (PI), Brown University
- Katie Buckley, Transforming Education
- [Christopher Hulleman](#), University of Virginia
- Erik Ruzek, University of Virginia
- Katerina Schenke, University of California, Los Angeles

Areas of Expertise: Economics, Education, Psychology, and Data Analysis

SAMPLE

625,134 students in grades 4-12 attending five major school districts that make up the [CORE districts in California](#). The researchers used data that were collected over three years, from 2014 to 2017.

The school districts that were sampled predominately served Latinx students (41%), however there was considerable racial/ethnic diversity with Black students (6%), Asian students (7%), Multiracial students (7%), and White students (7%). 29% of the sample did not report on their race/ethnicity.

TABLE 1. OUTCOME MEASURES

Academic	Behavioral	Social-Emotional
Math standardized test scores	Days absent	Self-management
ELA standardized test scores	Total number of disciplinary incidents	Growth mindset
		Self-efficacy (academic)
		Social awareness

**MINDSET
SCHOLARS
NETWORK**

The Mindset Scholars Network is a group of leading social scientists dedicated to improving student outcomes and expanding educational opportunity by advancing our scientific understanding of students' mindsets about learning and school.

KEY FINDINGS

There are large disparities in students' self-reported sense of belonging by racial/ethnic group and gender

Black students reported a lower sense of belonging on average relative to their Asian, Latinx, White, and Multiracial peers, even when comparing students who attended the same school. Across all students, Black female students reported the lowest sense of belonging, with Black male students reporting higher belonging than Black female students, but still significantly lower than all other students. These findings suggest that schools may differentially shape a sense of belonging for students in ways that systematically vary by race/ethnicity and gender.

Self-reported belonging correlated with a host of other psychologically adaptive and prosocial beliefs

Students who reported a greater sense of belonging also reported higher on social-awareness, self-management, self-efficacy, and growth-mindset scales, regardless of students' racial/ethnic background or gender. The relationship between sense of belonging and social-awareness was particularly strong.

Increases in students' self-reported sense of belonging in school were positively related to gains in academic and behavioral outcomes

On average, an increased sense of belonging from one year to the next was associated with corresponding improvements in attendance at school, declines in behavioral infractions while at school, and to a lesser degree, gains in math and reading test scores. Here again, the positive relationship between increases in belonging and outcomes was consistent across students of differing genders and racial/ethnic backgrounds. These results suggest that improving students' sense of belonging may have added benefits for other important outcomes among all students.

Going forward, the researchers will continue to explore the relationship between sense of belonging and student outcomes by individual characteristics (i.e., race/ethnicity) and school characteristics (i.e., racial/ethnic composition of the school). They will also explore what school climate factors are related to higher levels of belonging among students.

INSIGHTS & FUTURE DIRECTIONS

The researchers found evidence suggesting that belonging influences a host of academic, behavioral, and social-emotional outcomes in a sample of over half a million students. These results suggest that if practitioners focus on improving feelings of connectedness and belonging among students, it may have added benefits for other important outcomes. They also point to the potential importance of school-wide efforts to develop a culture of diversity and inclusion that engenders belonging among all students.

ABOUT THE MINDSETS & THE LEARNING ENVIRONMENT INITIATIVE

The Mindset Scholars Network launched a new interdisciplinary initiative in Fall 2016 to explore how learning environments shape the mindsets students develop about learning and school. The project's aim is to generate scientific evidence about how educators, school systems, and structures can convey messages to students that they belong and are valued at school, that their intellectual abilities can be developed, and that what they are doing in school matters.

Fourteen projects were awarded over two rounds of this initiative. Funding for the initiative was generously provided by the Bill & Melinda Gates Foundation, Joyce Foundation, Overdeck Family Foundation, and Raikes Foundation.

Mindsets and the Learning Environment: Relationships Between Mindsets and Academic Outcomes in a Statewide System of Higher Education

BY JESS HENNESSEY

RESEARCH SNAPSHOT | SUMMER 2018

Previous research has found that learning mindsets may play a particularly important role as students navigate challenging academic transitions, such as the move from high school to postsecondary education. However, less is known about why this relationship exists. How might students' initial beliefs about growth mindset, belonging, and the value of school relate to important indicators of academic success? Are these learning mindsets more impactful for some students than others, and might they function differently depending on the college learning environment?

This project, led by Chris Hulleman and Stephanie Wormington, explored whether students' learning mindsets as they enter college are related to their academic success during the first two years of school. They collected data at both public 2-year community colleges and public 4-year institutions across the state of Tennessee. They also explored whether the relationship between these learning mindsets and academic outcomes differed depending on students' background characteristics and school-level characteristics (see Table 1).

The research team chose to look at differences across these characteristics for two main reasons. First, they wanted to understand whether there are specific learning mindsets that are higher leverage for certain groups of students or in particular learning environments, or whether these relationships held constant across populations and settings. Second, these findings could be useful in identifying promising mindset interventions that colleges could implement in the field.

STUDY DESIGN

Almost 6,000 first-time, first-year college students were recruited from 13 community colleges and six 4-year institutions across Tennessee.

During the first weeks of the school year, participants completed a survey on their thoughts and beliefs about school, including measures of growth mindset, belonging, and value of college for their future career. The researchers tracked the relationship between these thoughts and beliefs on the one hand, and several indicators of academic success on the other hand. The academic indicators included overall grade point average (GPA), likelihood of remaining enrolled in school (i.e., retention), and the ratio of earned-to-attempted credit hours.

KEY FINDINGS

- Students who reported a stronger sense of belonging at the beginning of college had higher grade point averages (GPAs), were more likely to remain enrolled, and earned more credits than their peers
- On average, students in this study's sample were lower achieving according to national metrics. As the students progressed through their postsecondary education, initial feelings of belonging were stronger predictors of second and third semester outcomes for students with greater incoming advantage relative to their peers in the sample (e.g., continuing versus first generation; above versus below the sample average on incoming achievement)
- Students attending a 4-year college reported higher levels of growth mindset, belonging, and value for future careers than students attending 2-year college
- Students' learning mindsets and academic outcomes did not vary depending on their enrollment in learning support courses or based on the specific institution they attended

SAMPLE

The data included 5,981 first-time, first-year college students in Tennessee, across 19 institutions, who either attended community college and took at least one co-requisite class (i.e., a credit-granting support course for students below college-level in mathematics, English, and/or reading) or who attended 4-year college. About 75% of the sample attended community college and about 25% attended 4-year college. Their average composite ACT score was around 17 (compared to a national average of 20). The sample encompassed students from diverse backgrounds, with 62% female, 61% White, 25% Black/African American, 6.5% Latinx, and 67% first-generation college students.

Participants completed surveys on growth mindset, belonging, and perceived value of school to their future career in the first few weeks of fall semester. The researchers also measured student- and school-level characteristics (see Table 1).

**MINDSET
SCHOLARS
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Indicators were captured during each fall and spring semester so that researchers could examine relationships between belonging and academic indicators at discrete timepoints (e.g., GPA in semester 2) as well as cumulatively (e.g., cumulative GPA for semesters 1 and 2) over students' first two years of college.

TABLE 1. STUDENT- AND SCHOOL-LEVEL CHARACTERISTICS MEASURED

Factor Level	Features Measured
Student	Gender, race/ethnicity, first-generation status, ACT score
School	Type of institution (2-year or 4-year), gender composition, racial/ethnic composition, rural student composition, percentage of Pell-eligible students, student-to-instructor ratio

KEY FINDINGS

Students who reported a stronger sense of belonging at the beginning of college had higher GPAs, were more likely to remain in enrolled, and earned more credits than their peers

Students' sense of belonging was one of the strongest predictors of retention, along with prior academic achievement (as measured by ACT composite scores).

As students progressed through their postsecondary education, belonging was more important for continuing generation students and comparatively higher achieving students

In year 1, belonging was equally important for all students regardless of student characteristics. Belonging continued to be positively related to academic outcomes in year 2 for continuing-generation students, while belonging became unrelated or weakly related to outcomes in year 2 for first-generation college students. Belonging was also a stronger predictor of academic outcomes for students with comparatively higher composite ACT scores than students with comparatively low composite ACT scores, though it should be noted that the average ACT score for both groups in this particular sample was relatively low. These group differences emerged only when looking at second-year outcomes, highlighting the importance of tracking these students over time rather than only as they transition to college.

Students who were attending a 4-year college reported higher levels of growth mindset, belonging, and value than students attending a 2-year college

On average, self-reports of learning mindsets differed by the type of institution (4-year college vs. 2-year community college), even when controlling for prior achievement; this difference was more pronounced for certain groups of students. For example, continuing-generation male and White students at community colleges tended to report lower belonging than their counterparts at 4-year universities. The difference in belonging between first-generation, female, and Latinx students at community colleges and 4-year universities was less stark.

RESEARCH TEAM

- [Christopher Hulleman](#) (PI), University of Virginia
- Stephanie Wormington (Co-PI), University of Virginia
- [Ronald Ferguson](#), Harvard University
- Michelle Francis, University of Virginia
- Yoi Tibbetts, University of Virginia
- [Elizabeth Tipton](#), Northwestern University
- [Timothy Wilson](#), University of Virginia

Areas of Expertise: Psychology, Statistics, Education, Field Interventions

Students' learning mindsets and academic outcomes did not vary depending on their enrollment in learning support courses or based on the specific institution they attended

A key focus of this project was to explore how learning environments, including the institutions students attended and learning support courses (i.e., co-requisite courses) in which they were enrolled predicted their outcomes. However, initial findings suggested that the courses students enrolled in and the individual academic institution that they attended were not related to their learning mindsets or academic outcomes. In other words, there was greater variation in students' learning mindsets and academic outcomes within individual institutions than between institutions.

INSIGHTS & FUTURE DIRECTIONS

This research is valuable for shedding light on how learning mindsets may play a particularly important role as students navigate challenging academic transitions. So far, this research suggests that a student's sense of belonging matters for GPA and persistence at both 2-year and 4-year colleges. The use of a statewide higher education sample allowed the team to observe these trends for a wide range of students with differing backgrounds and experiences in diverse institutional settings. This means that colleges could potentially improve students' GPAs and retention by intervening on belonging and that these positive effects could be beneficial for students in a variety of contexts.

The project also begins to explore how students may have different psychological experiences of college, suggesting the need for the development of nuanced interventions that are attuned to the differing needs groups of students may have. In their next steps, the researchers will continue to explore how context may influence outcomes; for instance, students pursuing different majors or enrolled in different college-level courses may differ meaningfully from each other. The researchers will also consider findings for students enrolled in technical colleges, which present a different educational model from 2-year and 4-year colleges.

The researchers are continuing to partner with Tennessee to collect new data, including additional longitudinal data on participating students' academic outcomes. Based on these initial findings, they have expanded survey items to capture a wider array of learning mindsets, including different

aspects of belonging and other learning mindsets in different contexts (e.g., math, English). They have also established a partnership with the University System of Georgia, the fifth largest university system in the United States to expand their research beyond Tennessee. They have presented findings to stakeholders in both systems, and are using findings to create data-driven suggestions for direct-to-student interventions, pedagogical changes, and policy.

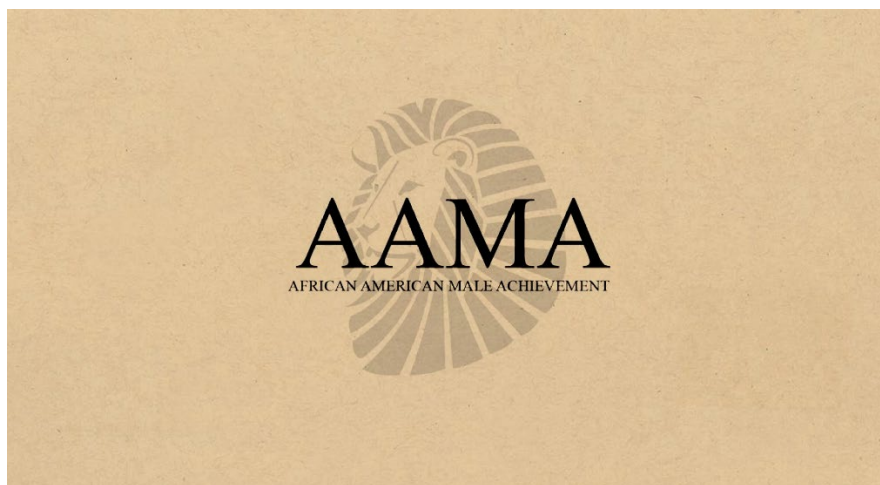
The research team plans to use their work to develop interventions that are customized for the student population and educational context. Guided by design-based principles, they will test interventions using an iterative process to refine them for various educational settings and student populations. They are also working with faculty and staff at postsecondary institutions and policymakers to share their research and provide trainings on how to create educational spaces that foster adaptive learning mindsets.

ABOUT THE MINDSETS & THE LEARNING ENVIRONMENT INITIATIVE

The Mindset Scholars Network launched a new interdisciplinary initiative in Fall 2016 to explore how learning environments shape the mindsets students develop about learning and school. The project's aim is to generate scientific evidence about how educators, school systems, and structures can convey messages to students that they belong and are valued at school, that their intellectual abilities can be developed, and that what they are doing in school matters.

Fourteen projects were awarded over two rounds of this initiative. Funding for the initiative was generously provided by the Bill & Melinda Gates Foundation, Joyce Foundation, Overdeck Family Foundation, and Raikes Foundation.

MINDSET SCHOLARS NETWORK BLOG



November 2, 2018

Mindsets and the learning environment: Assessing the African American Male Achievement Program in Oakland Unified School District

Chloe Stroman

The Mindset Scholars Network launched an [interdisciplinary initiative](#) in Fall 2016 to explore how learning environments shape the mindsets students develop about learning and school. The project's aim is to generate scientific evidence about how educators, school systems, and structures can convey messages to students that they belong and are valued at school, that their intellectual abilities can be developed, and that what they are doing in school matters.

Fourteen projects were awarded over two rounds of the initiative. Funding was generously provided by the Bill & Melinda Gates Foundation, Joyce Foundation, Overdeck Family Foundation, and Raikes Foundation. Seventeen different Network scholars are participating along with over 20 external collaborators. The projects span a wide range of topics, from exploring how teacher practices cultivate learning mindsets and identity safety in K-12 classrooms, to the relationships between learning mindsets and neural processes throughout adolescent development.

This is part of a series of blog posts in which we will hear from the leaders of each of the projects funded in the second round of the initiative to find out more about the questions they are exploring, what they are learning, and how their work is advancing the field of mindset science.

The next project in our Mindsets and the Learning Environment portfolio, *The Effects of the African American Male Achievement Program*, evaluates the [African American Male Achievement](#) (AAMA) program, the first program in the nation to embed a culturally-centered curriculum that is specifically targeted to black male students, who face systemic barriers to academic success. AAMA launched in 2010 and is part of the Office of Equity within Oakland Unified School District (OUSD). The program is an example of "[targeted universalism](#)," a concept

developed by John Powell that recognizes universal goals for all students, but also emphasizes the need for strategies that meet the unique needs of groups who have inequitable access to opportunities and distinctive cultural contexts.

This study builds on a [2014 report by Vajra Watson](#) about AAMA and is the first independent quantitative examination of the program's effects on academic outcomes, including attendance, grades, standardized test scores, and disciplinary actions.

Who are the members of the research team?

Mindset Scholar [Thomas S. Dee](#) and Emily Penner, an assistant professor of education at the University of California, Irvine, are leading the research project in coordination with the [John W. Gardner Center for Youth and Their Communities](#) at the Stanford Graduate School of Education.

What is AAMA?

Two of the primary goals of AAMA are to foster and reinforce black male students' positive identity formation and sense of belonging in school. The program provides comprehensive academic mentoring that takes place regularly as part of the school day, rather than episodically in an extracurricular setting. AAMA also works with district leadership to provide professional development for teachers and engages parents to support their child's college readiness.

The centerpiece of AAMA is a set of elective courses led by black male instructors who are carefully selected based on cultural competency, understanding of youth development, and teaching experience. The courses emphasize broad academic mentoring, including leadership and character development activities, personalized support (e.g., transcript evaluation and guidance counseling), and field trips that expose students to colleges and careers. The courses use a culturally relevant curriculum and pedagogy, relying on materials and instructional methods that align with the experiences of the students. Finally, the courses promote peer-support by emphasizing unity among all students and by clustering students with diverse achievement levels in the same classrooms. Outside of school, the program also features conferences, community gatherings, and a summer internship program.

What is the purpose of the project and how will it fit into the field of mindset science?

[Research in the social sciences](#) has found that even brief psychological interventions that target important psychological questions and concerns can have powerful effects. Sustained initiatives like AAMA, which is embedded in multiple school activities and is responsive to the specific psychological and cultural experience of black male students, offer opportunities to extend our understanding of more comprehensive approaches that attend to students' psychological experience of school.

In their [previous work](#), Tom and Emily found that participation in an ethnic studies course offered by the San Francisco Unified School District substantially improved attendance, grade point average (GPA), and credit completion among 9th grade students. Before that study, Emily explains, "although there was growing enthusiasm and largely qualitative evidence to support the efficacy of ethnic studies courses, there was no strong causal evidence. In that sense the large, positive effects we found were surprising. But, given that this course functioned like a year-long social-psychological intervention, maybe it's a bit less surprising."

"Our results led us to consider whether other programs with a strong commitment to racial equity that valued students' racial identities and histories while buttressing their academics could also have similar impacts," said Emily. "That really led to our interest in the AAMA program." The AAMA adds on key features, such as mentorship and peer-to-peer support networks, to the culturally relevant pedagogy studied in San Francisco.

The evidence provided by this project will inform refinements to AAMA and will provide similar programs (e.g., President Obama’s My Brother’s Keeper initiative) and the field at-large with a valuable review of the challenges and opportunities that exist in sustained initiatives like this one. The researchers hope their assessment of AAMA can serve as a “proof point” that stimulates the design, adoption, and implementation of programs for other groups that have experienced inequitable access to opportunities in education contexts.

About the data

Through the Youth Data Archive maintained by the Gardner Center at Stanford, the team has access to longitudinal student-level data from OUSD spanning the periods before and after the program began, from academic year 2008-2009 to 2016-2017. They will use transcripts to determine which students participated in AAMA. The study will investigate the effect of participating in AAMA on several measures of students’ academic engagement (e.g., chronic absenteeism and the probability of being suspended or expelled) and academic outcomes (e.g., grades in core academic subjects, test performance, school dropout, and college matriculation).

Year one progress

This project is on a two-year timeline. The first year has been focused on data collection and cleaning. While the researchers have not begun their core analyses, they have culled important lessons about large-scale data collection within a school district.

The project has greatly benefitted from key partnerships with the Raikes Foundation and the Gardner Center at Stanford and, in turn, their long-standing relationships with OUSD. With these partnerships in place well before the project started, all stakeholders had a shared sense of purpose and a shared approach to collecting and using data.

For similar projects, the researchers recommend data systems that focus on valid measures and the integration of different data fields both at a moment in time and for students over time. They also emphasize the importance of documenting school and district initiatives with a level of rigor that can support formal analyses.

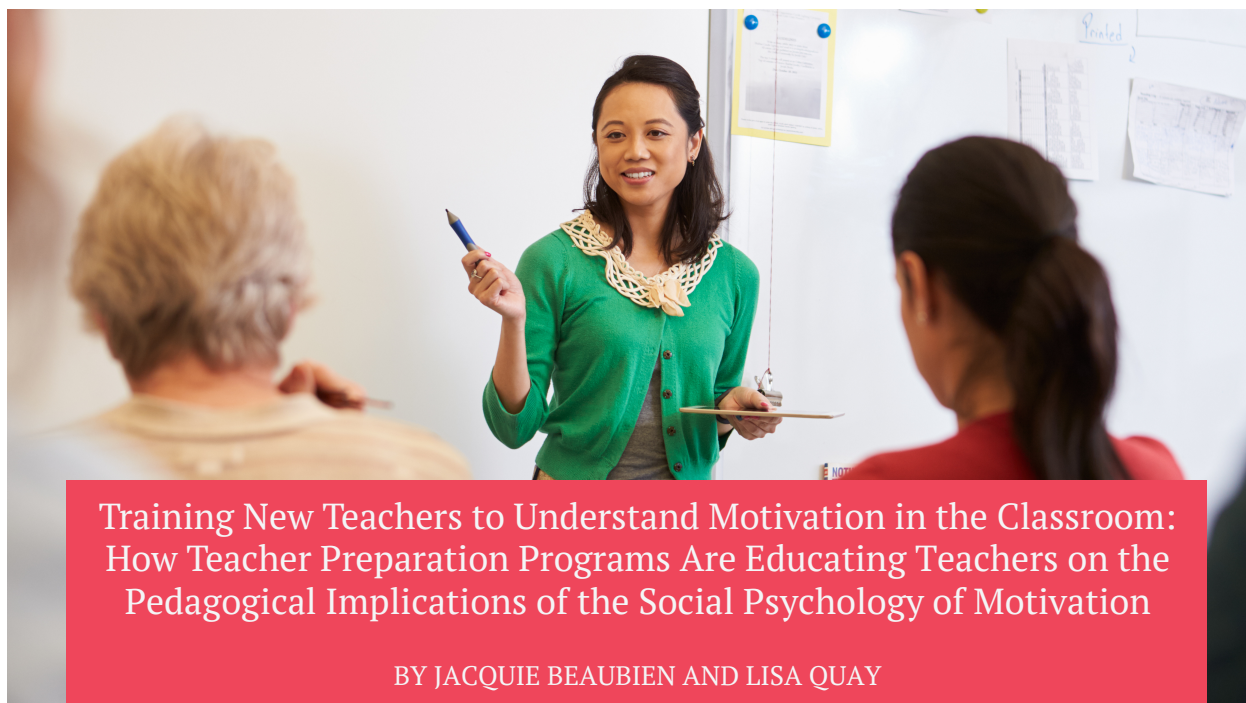
This project makes a compelling case for investments in district-level data systems and highlights the value of dialogue between researchers, practitioners, and trusted intermediaries in the notoriously challenging process of managing longitudinal student data.

What are the next steps for the project?

The project team will analyze the causal impact of AAMA on black male students’ academic outcomes using two strategies. First, the team will compare the changes observed among AAMA participants to the changes observed during the same time frame among students who did not participate using a rigorous statistical method that researchers call a “difference in differences” design. Second, the team will leverage the staggered roll-out of AAMA at different schools in Oakland to compare changes in student outcomes at “treatment” schools to changes at “control” schools.

“We plan to look at impacts on not only academics,” Emily explains, “but also behavioral indicators that likely pick up on school belonging, such as attendance and dropouts.” Together, these data could help unpack the impact of the AAMA program for students who participate, as well as the impact of any “spillover” effects for non-participating students. The Mindset Scholars Network will continue to publicize this important work as it progresses.

This post is available at <https://tinyurl.com/AAMABlog>.



Training New Teachers to Understand Motivation in the Classroom: How Teacher Preparation Programs Are Educating Teachers on the Pedagogical Implications of the Social Psychology of Motivation

BY JACQUIE BEAUBIEN AND LISA QUAY

RESEARCH REPORT | MARCH 2019

Social psychological research in school contexts has highlighted the critical role that educators play in shaping students' psychological experience of learning and school, which influences their academic motivation, engagement, and outcomes. Despite this growing body of scientific evidence, many teacher preparation programs do not appear to be incorporating practical insights from this research into their programs so that new teachers understand important determinants of motivation and how pedagogy can support (or undermine) students' motivation. It is unclear whether this is due to a lack of awareness of the research, negative perceptions about it, or other unidentified barriers to adoption.

To begin exploring this topic, the Mindset Scholars Network launched a project to interview teacher preparation program stakeholders within organizations that have begun incorporating this body of research. These interviews focused on understanding the processes, successes, and challenges stakeholders report they have experienced related to integrating research on motivation into their programs. The goal of this project was twofold: to begin to understand how the scientific community could support teacher preparation stakeholders in utilizing this research and to expose questions and concerns among teacher training program faculty and administrators that could be considered in future research.

HIGHLIGHTS

- Wide variation and notable gaps exist in current approaches to training teacher candidates on the social psychology of motivation among programs that have begun incorporating this body of research; the field lacks a clear definition and examples of psychologically attuned teaching, what gets covered depends on faculty expertise and interest, and ties to the research may not be made explicit
- Participants felt that programs are not yet doing enough to cultivate teacher candidates' knowledge and skill in building inclusive classroom environments that support belonging, which is foundational to creating contexts that support motivation
- Participants are seeking clearer connections between the social psychology of motivation and other topics of interest in teacher education, including culturally responsive pedagogy, trauma-informed practice, universal design for learning, and the science of learning
- Research on the social psychology of motivation is most compelling when the practical significance is clear, compelling, and actionable; when it connects with faculty and candidates' lived experience and prior knowledge; and when there is guidance on exploring its implications for practice
- Other challenges to integrating this body of research include navigating complex processes for curriculum redesign in traditional universities, difficulty changing long-standing norms among faculty, and addressing specific practices that new teachers struggle to apply in the classroom

MINDSET
SCHOLARS
NETWORK

The Mindset Scholars Network is a group of leading social scientists dedicated to improving student outcomes and expanding educational opportunity by advancing our scientific understanding of students' mindsets about learning and school.

DEFINING THE "SOCIAL PSYCHOLOGY OF MOTIVATION"

For this project, we defined the “social psychology of motivation” for participants as follows:

We are interested in social psychological factors that support—or undermine—students’ motivation to learn and that can be shaped by teachers’ practices and the classroom environment they create on a daily basis. These social psychological factors include: beliefs about the malleability of ability, sense of belonging or belonging uncertainty, perceptions of the value and cost of engaging in tasks, experiences of social identity threat (or worries about being judged negatively based on your identity), and experiences of bias and prejudice.

STUDY DESIGN

RESEARCH QUESTIONS

1. What aspects of social psychological research on motivation are stakeholders who are incorporating this research into their teacher training curriculum most familiar with?
 - a. What/who are the sources of information that have had the greatest influence on their decisions to incorporate this research into their programs and course curricula?
 - b. How are they incorporating the research into their programs?
2. What do stakeholders report has been most helpful for generating awareness, interest, and buy-in among their faculty and peers?
 - a. What context factors influence the decision of, or processes used by, stakeholders to introduce new research-based concepts and practices into their curriculum?
 - b. What factors influence their own perceptions of this research and those of other faculty and administrators?
3. What do stakeholders report has been most challenging about incorporating principles from this research into their teacher training curricula?

PARTICIPANTS AND METHODS

We engaged a total of 17¹ U.S.-based participants from 15 institutions in the project through 11 one-on-one, semi-structured interviews and one focus group with seven participants. Participants included faculty and deans at traditional schools of education (n = 9), faculty and administrators at residency programs and teacher induction programs (n = 5), and intermediaries that support schools of education and residency programs (n = 3).² Recruitment focused on those who are integrating some aspects of research on the social psychology of motivation. Participants were recruited using a snowball sampling method. To our knowledge, this is the first project to systematically examine these research questions, which merited a design and sample of this type. Preliminary findings were presented to researchers and practitioners in a focus group with 16 participants during a convening held in November 2018 by the Mindset Scholars Network. Recommendations from this focus group have been incorporated into the Future Questions section.

FINDINGS

Findings reveal four key areas of insight. First, wide variation and notable gaps exist in current approaches to training teacher candidates on the social psychological aspects of motivation. Second, there is a strong desire to better understand the links between social psychological research on motivation and research and practice focused on diversity, equity, and inclusion taking place in other domains. Third, we gained insight into what makes research compelling and which factors have been most helpful in navigating the logistics of incorporating the research, such as translational literature and “knowledge brokers.” Lastly, participants shared factors that have created challenges in incorporating the research, such as complex governance structures that make curriculum change difficult, causes of resistance among some faculty, and certain research-based principles teacher candidates find most challenging to apply in their practice.

1. WIDE VARIATION AND NOTABLE GAPS EXIST IN CURRENT APPROACHES TO TRAINING TEACHER CANDIDATES ON THE SOCIAL PSYCHOLOGY OF MOTIVATION

Participants broadly agreed that all of the constructs we described are important for teacher candidates to understand and know how to apply. However, there was wide variability in terms of which constructs are being

¹ One participant participated in the focus group and an interview.

² Participant demographics: 13 women, 4 men; 12 white, 2 black, 2 Latinx, and 1 Asian-Pacific American.

addressed by faculty, when during their training candidates are learning about them, and how they are learning about the concepts and their application in practice. Most participants reported that some aspects of growth mindset and belonging are being addressed in candidates' coursework, but many felt candidates were only gaining a surface-level understanding. Factors contributing to this variability are discussed below.

Which constructs get featured—and when they get covered in the curriculum—varies significantly and is largely driven by individual faculty decisions

The decision-making processes of faculty and program administrators on which constructs to highlight are complex and may benefit from further exploration with a broader sample. Preliminarily, some decision-making factors include perceptions of which constructs are the highest leverage, which constructs have an empirical evidence base and also align with candidates' and faculty's own lived experience, and clarity about how to logically integrate constructs. Notably, the field does not currently have recommendations for a developmental sequence to help teachers build their knowledge and skill in psychologically attuned practices: teacher moves and instructional practices that align with what we know from social psychological research on motivation.

Given these factors, it is unsurprising that the constructs teacher candidates are learning about in their coursework vary significantly between programs. And while a couple of participants reported that their programs are integrating aspects of the research in a sequenced way that spirals throughout their curriculum (e.g., embedded into both content and methods coursework over the duration of the program), participants from most traditional universities reported bringing in the research within individual courses, largely based on one-off faculty decisions. In these undergraduate programs, when teacher candidates learn about theories of motivation and constructs such as growth mindset, they typically do so long before they are in a position to practice applying them in real classrooms. They may also be introduced to the same construct by more than one professor but rarely in a coordinated or coherent fashion.

Faculty differ significantly in their approaches to integrating principles from motivation research and commonly used approaches do not always make explicit links to the research

Some faculty are teaching candidates practices that appear aligned with the research, but are not drawing explicitly on the constructs, theory, or empirical literature directly in doing so. For example, some are building psychologically attuned practices into their content area instructional strategies (e.g., changing how mathematics is taught in ways

that are aligned with principles from research on growth mindset and relevance) but may not help candidates see the connection between these instructional practices and students' motivation. This is notable since motivation and engagement is a common point of concern among candidates. Others, particularly Minority Serving Institutions (MSIs), were described by a participant as more traditionally oriented toward the "social side of education" and the idea that "students' whole identities have to be valued in the classroom in order to bring about learning;" faculty and administrators at these institutions may promote ideas aligned with this body of social psychological research but may not connect these ideas explicitly to the literature. A third approach privileges candidates learning through discovery without faculty making explicit connections to the research. Faculty may need a clear and compelling rationale for why teaching students about the research more explicitly is an important complement to their current approaches.

No clear definition of psychologically attuned teaching currently exists to guide faculty and programs' training of teacher candidates

While there is some evidence for which teaching practices matter, participants recognized that we currently lack a clear definition of what psychologically attuned teaching is, and strong, evidence-based examples of what it looks like in action. Participants expressed a desire for more resources that could provide modeling of the practices we know are important in a variety of contexts (e.g., grade levels, content areas) and for observation rubrics and other formative feedback tools so that candidates can receive productive coaching. Such resources could also support skill-building among faculty.

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Addressing teacher beliefs and biases is seen as important yet insufficiently addressed by many teacher training programs

Most participants, regardless of their role, saw addressing candidates' own beliefs and biases as foundational to preparing them to create inclusive environments that support

motivation for the diverse population of learners served in schools. Faculty believed they had to address candidates' own fixed beliefs about ability (particularly around mathematics), for example, before candidates could effectively address such beliefs in their students. And many participants said that since the vast majority of teachers in the United States are white and female, there is a need to actively address what this means for candidates in terms of how their cultural lens and prior experiences shape their beliefs about their students, the choices they make, and what one participant called the "critical awareness" required to build meaningful relationships with students, families, and communities across lines of difference. Multiple participants expressed a desire to better understand the role of implicit bias in teaching. Few felt like their programs—or others with which they were familiar—were addressing these issues of teachers' beliefs and biases adequately, and sought guidance on how to do so effectively.

2. UNDERSTANDING THE LINKS TO DIVERSITY, EQUITY, AND INCLUSION ARE A PRIORITY

Participants strongly agreed that it is important for new teachers to understand how to use pedagogical practices that create inclusive classroom environments and support a sense of belonging among student bodies that are diverse in terms of economic, racial, ethnic, and linguistic background, ableness, gender identity, and sexual orientation. Several areas of concern emerged related to how to prepare teachers, and how to advance research in this area.

Many felt they were not yet doing enough to build teacher candidates' ability to create inclusive environments that support belonging

Many participants felt that their programs needed to do more to cultivate teachers' knowledge and skill in building inclusive classroom environments that support belonging, which is foundational for academic motivation.³ They also felt they were not doing enough to train teachers on what to do when placed in schools that may be enacting inequitable policies or when challenged by more experienced teachers who may question their approach.

"[Faculty in one program] consistently talked about belonging and how important it is and how being known, loved and cared for, and having people believe in your own possibilities is so important for learning. And literally, [I] went into a high school that they partner with that was tracked . . . like most large comprehensive American high

schools are tracked. . . . The Advanced Placement classroom was [almost] 100% white students and the other side of the hallway in the lower track classroom was [comprised of] students of color. And there was no conversation that the program was having, [or] the cooperating teachers [at that school] were having, with the candidates about the systems that produced that inequity."

Faculty and administrators want to better understand how to prepare candidates to recognize the multiple levels on which belonging can be signaled (or undermined), and become—as one participant described it—"critically reflective" about their own practice, while also recognizing that larger structural factors outside their control may also influence motivation in the classroom.

Unpacking belonging with teacher candidates is seen as an area that needs development

Some participants expressed concern that the nuances of belonging are not well-understood or well-defined. One participant articulated three layers of belonging that she thought needed to be addressed in training new teachers:

- *Who is accepted?* "Am I an outsider in this space or am I actually welcome? Is there a climate that embraces who I am holistically... or am I only welcome here as, [for example], a 'smart African American'?"
- *Who has "opportunities to be smart"?* "Do you have the opportunity to be smart in this space or interpreted as being smart in the space? [This] is not just climate and culture, but also gets into bias for or against certain individuals."

Faculty and administrators want to better understand how to prepare candidates to recognize the multiple levels on which belonging can be signaled (or undermined), and become—as one participant described it—"critically reflective" about their own practice, while also recognizing that larger structural factors outside their control may also influence motivation in the classroom.

³See, for example, [Walton & Brady, 2017](#) and [Gray, Hope, & Matthews, 2018](#).

- *Is difference welcomed on a broad scale? “Is this in an assimilationist environment where everybody needs to be the same or is this an environment where I’m free to be me, and I can excel within who I am?”*

Concern that siloing between fields may be limiting advancement in this area

Some participants noted that social psychology needs to be connected with other bodies of work related to culturally responsive pedagogy, trauma-informed practice, universal design for learning, and the science of learning. This involves connecting researchers across disciplines, and also building conceptual maps and syntheses that help educators and those who are training educators make sense of these various strands of work so they can be seen as coherent, rather than different priorities they have to choose between.

For example, one participant observed, “The voices [of MSI researchers] in this body of research is absolutely absent. It’s not because they’re not doing the work, but because it is not recognized and valued.”

“Stealth” approaches from social psychology can seem paternalistic and insufficient

Some participants raised concerns with respect to the “stealth”⁴ approach commonly used in social psychological research. One concern was that these stealth approaches can seem paternalistic in part because such interventions aim to change a person’s perceptions and behaviors and do not explain the object of the intervention in doing so. Second, multiple participants indicated they believe that creating more equitable educational experiences is not possible without confronting teachers’ biases explicitly. For example, one participant said, “I’m now starting to feel like we’re talking about [teacher bias] in a really nice way. It’s about high expectations for students, and I almost feel like the balance needs to swing a little bit more towards being more direct.” On the latter point, it is worth noting that scientists are actively working to understand the impact of different approaches (including stealth and direct approaches) to addressing bias and its consequences on behavior.⁵ Third, some participants noted that efforts to change teachers’ and students’ beliefs and perceptions are incomplete without also making changes to inequitable practices and policies at the school and district level.

3. RESEARCH TRANSLATION PRODUCTS THAT ARE ACCESSIBLE, ACTIONABLE, AND RESONATE WITH LIVED EXPERIENCE GENERATE GREATER INTEREST AND UPTAKE

Overall, there was consensus that scientific research is most compelling when it makes the practical significance clear, compelling, and actionable, and when it connects with faculty and candidates’ lived experience and prior knowledge—regardless of how impressive the method or the results. This may entail working with teacher preparation stakeholders and content area experts to make meaning of the translated research and find ways to integrate it so that it builds on current practice in manageable ways.

Translational writers are influential sources

For many, reading translational work is preferred because they lack the time or appetite to wade through statistics and necessarily-cautious academic language to understand research findings and how to apply them to their context. Participants cited translational sources such as *Education Week* and *Educational Leadership* or synthesis reports from education organizations like Deans for Impact as more likely to present research in accessible language directed at specific educator audiences and to make the connections to practice more explicit and concrete. As one participant noted,

“If it’s sitting in an academic journal somewhere, I don’t think it’s reaching those who really need to be accessing that information... [this research is] not getting translated out with the speed and efficiency with which it could.”

Scientific research is most compelling when it makes the practical significance clear, compelling, and actionable, and when it connects with faculty and candidates’ lived experience and prior knowledge—regardless of how impressive the method or the results.

“Knowledge brokers” can provide valuable guidance and support

One participant saw what she described as “knowledge brokers”—institutions that both translate research and

⁴ Social psychological interventions are often “stealth” in nature because they use careful framing to avoid signaling to participants that they are being targeted for help or are being singled out as members of a stigmatized group, for example. This increases the likelihood that people remain open to the message of the intervention. These interventions also activate psychological levers to promote behavior change, similar to active learning strategies (e.g., putting a message into one’s own words and connecting it to one’s own experience, which prompts participants to identify with and internalize the intervention message). For more on these types of interventions, see this [summary](#) of [Walton & Wilson, 2018](#)

⁵ See, for example: [Lai et al., 2016](#) and [Dovidio, Love, Schellhaas, & Hewstone, 2017](#).

provide guidance in exploring its implications for practice—as playing an important role in amplifying the integration of this research into teacher preparation programs. Organizations such as Deans for Impact, Branch Alliance for Educator Diversity, and Alliance for Excellent Education, among others, may be well positioned to help facilitate the integration process because they can position the research in a way that resonates with faculty, provide collaborative learning experiences and integration tools, and in some cases, offer technical assistance to leadership during the integration process. Additionally, because these organizations are skilled in communicating between research and practice, they can act as useful sources of insight on where gaps exist in the research agenda.

“Knowledge brokers”—institutions that both translate research and provide guidance in exploring its implications for practice—[could play] an important role in amplifying the integration of this research into teacher preparation programs.

Multiple factors influence the perceived credibility of this research

Participants mentioned several factors that affected their perceptions of the credibility of this research, including: the prestige of the publication journal (particularly seeing this research in premier interdisciplinary journals like *Science*); representativeness of the study sample to their own contexts; mixed methods that provided richer insights; a non-deficit framing of the problem being addressed; and the reputation of the researcher.

Participants also identified issues related to the diversity of the participants, the context, and the researchers themselves as important. For example, one participant said,

“Within the [Minority Serving Institution] community, the first thing they look at is the diversity of the study. If it wasn’t a diverse context or if somehow they feel like the diversity was artificial, they automatically reject it. You don’t even get to the results.”

Many participants also noted that seeing their own experience as teachers—both their successes and their challenges—reflected in the research was an important factor in their interest.

4. CHALLENGES TO INTEGRATING THIS RESEARCH INTO TEACHER PREPARATION PROGRAMS

Challenges to integrating this body of research into teacher preparation programs include structural factors that make curriculum change difficult and the degree to which research-based recommendations deviate from existing norms in these institutions. Participants also spoke to specific aspects of the research that new teachers struggle to master.

Change management at traditional universities is complex

For deans at traditional universities, even when they see the need to integrate research on motivation systematically, change is challenging due to governance structures, complex decision-making processes for curriculum redesign, and a strong culture of departmental and faculty autonomy, which can lead to siloing and a lack of coherence across the curriculum.

Some strategies cited by administrators as helpful for creating awareness and buy-in included:

- Providing faculty with data about their candidates’ experiences in the field such as testimonials on where they felt the program did not adequately prepare them.
- Collaborating with district stakeholders (e.g., superintendents and school boards) who can emphasize the need for candidates to understand this aspect of learning.
- Creating space for faculty to engage in their own review of the research and its relevance to teacher preparation.
- Utilizing research translations and syntheses to guide informed discussions with faculty.
- Creating research-informed experiential learning opportunities for faculty that mirror what administrators want for their candidates and their future students.

Change is challenging due to governance structures, complex decision-making processes for curriculum redesign, and a strong culture of departmental and faculty autonomy, which can lead to siloing and a lack of coherence across the curriculum.

Principles from the research can run counter to long-standing norms in teacher training programs

Participants raised two additional challenges related to how principles from this research can run into issues with existing norms and practices in teacher training programs. First, faculty and administrators' receptivity to the research often depends upon the extent to which this research counters what they learned in their own training. In some cases, participants observed that principles from this research may not align with faculty's training. Second, several stakeholders mentioned that an additional barrier to adoption is that this research has not been integrated into the textbooks that faculty assign to candidates (e.g., on mathematics or literacy instruction, and other common topics of education coursework). As one participant reflected,

"In the math education world, research on motivation doesn't fit in very well... I'm going chapter by chapter in my [text]books. There's no obvious place to put in a section on motivation, because the [text]books aren't structured that way."

Receptivity to the research often depends upon the extent to which this research counters what [faculty] learned in their own training... An additional barrier to adoption is that this research has not been integrated into the textbooks that faculty assign to candidates.

Pre- and in-service teachers commonly struggle with certain principles from this research

In addition to issues described above related to candidates' own beliefs and biases, as well as their understanding of belonging, participants named several additional aspects of the research that teachers struggle with in particular, including:

- Giving students feedback on their progress in a way that supports a growth orientation. This is particularly difficult if teachers have not yet developed the deep understanding of the academic content necessary to structure larger learning objectives as a series of smaller progressions and to know how to help students build from misconceptions to accurate understanding.
- Using process praise (praising students' approach and how it led to a positive outcome or improvement) effectively—a practice associated

with supporting a growth mindset. Relatedly, teacher candidates express disbelief that person praise (praising student's abilities alone) is potentially harmful to students' motivation.

- Remaining confident in, and advocating for, psychologically attuned practice when challenged by school culture or peer pressure.
- Holding students accountable and providing effective consequences without damaging students' trust or motivation. Teachers often have lay theories (e.g., using rewards and punishments to motivate students) that seem efficient to them in the short term, but that can have negative long-term consequences on student motivation and learning.
- Persisting themselves through challenges when stressed without reverting to ineffective habits that could undermine students' motivation (e.g., switching back to extrinsic rewards or punishments).
- Struggling with the idea that in order to engage in psychologically attuned practices that support students' motivation, they have to loosen their control and allow students to experiment, make mistakes, and struggle, which often feels uncomfortable.
- Elementary level teachers in particular may struggle with their own motivational issues related to mathematics. They may not want to teach mathematics, and their own anxiety about the content and their perceptions about its relevance can affect their instruction.
- Generally, teachers struggle without more concrete examples or case studies to understand what constructs and principles from the research look like when applied to practice.

FUTURE QUESTIONS

This project has surfaced questions related to four topics that the field may want to explore, including:

1. Effective strategies for training educators

Questions related to effectively training educators on creating environments that support motivation for a diverse student population include:

- What is currently known about evidence-based teaching practices that are psychologically attuned?

- How should we define psychologically attuned teaching, and do so in a way that centers on issues of identity, culture, and the heterogeneity of both educators and teaching contexts? What new or existing measurement tools might help answer this question?
- What is an appropriate developmental sequence for training educators on psychologically attuned practice that cuts across key topics in teacher preparation programs (e.g., content-area instruction, classroom management)?
- Which teacher training programs are providing teacher candidates with strong preparation to create classroom contexts that support students' motivation and do so in a way that is responsive to students' cultural background and how they are situated in school and society?
- What new resources could support programs in training teachers to apply research insights across multiple grades, content areas, and contexts?
- How does training school administrators on the social psychology of motivation differ from training teachers? What new or existing resources would support this training?

2. Research on adult beliefs and biases

Questions related to the role of adult beliefs and bias include:

- Given the interest among teacher preparation providers, what is an appropriate research agenda focused on teachers' beliefs and biases?
 - How should this agenda consider biases in structures in addition to biases in individuals?⁶
 - How can researchers from multiple domains (e.g., researchers studying prejudice and intergroup relations, experts on organizational change) work together on advancing this agenda?

3. Synthesis across related domains

Future work on understanding motivation and effective teacher training would benefit from considering:

- How might connections in both research and translation work be encouraged between the social psychology of motivation and other relevant domains such as: culturally responsive approaches; social-emotional learning; the science of learning; mindfulness; learner variability and universal design for learning; and research on adversity and trauma-informed practice?

4. Opportunities and challenges in institutional change

Questions on how to effectively support institutional change within teacher training programs include:

- What resources and support would help position administrators and faculty in teacher preparation programs as change-makers with regard to this body of research?
 - What resources could be provided to increase awareness and buy in?
 - How should the "knowledge brokering" process be supported in this context?
 - How might faculty be supported in an inquiry process that allows them to make meaning of the research and see connections to their practice?
- What are the greatest leverage points for influencing how teacher candidates are taught about this body of research and its implications for creating classroom contexts that support motivation for all learners (e.g., textbooks for pre-service teachers, professional standards, online teacher training programs)?
- Are the adoption challenges identified in these interviews with participants who are already incorporating aspects of the research the same or different than those at other institutions who may not have previous exposure or interest in the social psychology of motivation?

CONCLUSION

Training new teachers on the social psychology of motivation and psychologically attuned practices in an integrated, practically relevant fashion is an important direction for teacher preparation. This body of research recognizes that students' subjective experience of school matters for learning and educational outcomes—and that different students experience classrooms in different ways based on their past experiences and how they are situated in society. This project reported on the experiences and observations of teacher preparation stakeholders who are integrating these insights into their training of new teachers. Their reflections highlight areas where more work is needed in order to integrate this perspective more fully into how we train teachers in America.

⁶ See, for example, [Murphy, Kroeper, & Ozier, 2018](#).

ADDITIONAL RESOURCES ON BELONGING

Please note that all documents can be accessed in Google Drive at www.tinyurl.com/MSNBelonging

RECENT ACADEMIC SYNTHESSES

The Many Questions of Belonging

Greg Walton & Shannon Brady, 2017.

In this chapter from the recently revised Handbook of Competence and Motivation, the authors offer a definition of belonging that goes beyond personal relationships to consider a set of implicit worries, questions and inferences that arise for individuals about the quality of fit between themselves and a given setting. The authors provide an overview of the evidence base and literature on belonging.

Prejudiced Places: How Contexts Shape Inequality and How Policy Can Change Them

Mary Murphy, Kathryn Kroeper, & Elise Ozier, 2018.

Abstract: Psychological theories often locate the problem of prejudice within people. However, prejudice stems from both people and places. Prejudiced contexts are places with predictable, systematic inequalities in experience and outcomes based on people's social group memberships—advantaging people from some social groups, while disadvantaging people from others. The prejudice-in-places model illuminates sources of inequality that would otherwise be overlooked and suggests novel avenues for intervention. By understanding how norms, values, policies, practices, and procedures can create prejudiced places, leaders and policymakers can intentionally debias environments so that members of all social groups can flourish in educational and organizational settings.

Black and Belonging at School: A Case for Interpersonal, Instructional, and Institutional Opportunity Structures

DeLeon Gray, Elan Hope, & Jamaal Matthews, 2018.

Abstract: This article is guided by two goals: (a) to consider how race-based perspectives can serve as theoretical tools for investigating Black adolescents' opportunities to belong at school, and (b) to describe cultural and political aspects of schooling that can support a sense of belongingness among Black adolescents. The authors discuss support for the belonging of Black adolescents in terms of interpersonal, instructional, and institutional opportunity structures. They provide a set of guiding questions for scholars seeking to advance educational psychology research at the intersection of race, belonging, and motivation. They end by describing specific research directions for an inclusive examination of school belonging, along with strategies to accomplish this goal.

Social Class Disparities in Higher Education and Professional Workplaces: The Role of Cultural Mismatch

Nicole Stephens, Sarah Townsend, & Andrea Dittmann, in press.

Abstract: This article focuses on the cultural mismatch between the independent cultural norms prevalent in middle-class contexts and U.S. institutions and the interdependent norms common in working-class contexts. In particular, the authors explain how cultural mismatch fuels social class disparities in higher education and professional workplaces. First, they explain how different social class contexts tend to reflect and foster different cultural models of self. Second, they outline how higher education and professional workplaces often prioritize independence as the cultural ideal. Finally, they describe two key sites of cultural mismatch—norms for understanding the self and interacting with others—and explain their consequences for working-class people’s access to and performance in gateway institutions.

Leveraging Cultural Differences to Promote Educational Equality

Laura Brady, Adriana Germano, & Stephanie Fryberg, 2017.

Abstract: This paper theorizes that academic interventions will be maximally effective when they are culturally grounded. Culturally grounded interventions acknowledge cultural differences and validate multiple cultural models in a given context. This review highlights the importance of considering culture in academic interventions and draws upon the culture-cycle framework to provide a blueprint for those interested in building more efficacious interventions. Specifically, the paper reviews literature in education and psychology to argue: first, when working-class and racial minority students’ cultural models are not valued in mainstream academic domains, these students underperform; and second, many current academic interventions intended to improve working-class and racial minority students’ academic outcomes could be further enhanced by cultural grounding.

PRACTICE-RELEVANT WORKING PAPERS

On Mindset and Practices for Re-Integrating “Belonging” into Mathematics

Instruction

J. Sharif Matthews, 2018.

Abstract: Restoring and protecting a sense of belonging for Black, Brown, and poor youth remains at the heart of social justice in U.S. schools. Drawing on research and lived experiences as an educator, Dr. Matthews discusses mindsets and practices teachers can develop to assuage the assault against belonging and become proactive in restoring equity and opportunity in mathematics classrooms that serve historically disenfranchised students. This paper highlights the critical mindsets necessary for enacting and sustaining equity-based teaching practices. Next, it provides instructional strategies embedded within two high-leverage practices (i.e., coordinating and adjusting instruction for connection to students’ lives and analyzing instruction for the purpose of improving it) aimed at supporting teachers in understanding the significance of belonging beyond simply building classroom community, and in becoming aware of their power to promote belonging through their instructional choices and practices.

MINDSET SCHOLARS NETWORK RESEARCH SUMMARIES

Mindset Programs that Forecast Common Challenges Prior to the Transition to College Can Reduce Achievement Gaps

This research summary presents the findings from three studies that explore whether online programs delivered before college can help prepare students for challenges they may face during the transition to college.

Countering Stereotypes and Enhancing Women’s Sense of Belonging to Reduce Gender Gaps in pSTEM

This issue brief shares what researchers have learned about how concerns about belonging affect gender representation in the physical sciences and engineering (pSTEM) and how we can use this understanding to increase women’s participation in these fields.

Students Need to Know Your Only Bias Is for Them to Succeed

This research summary presents the findings of a study that explored how teachers can foster greater trust and improved academic outcomes, particularly among students of color, in the process of providing critical feedback to students on their schoolwork.

Exploring Differences in Background Can Promote Greater Equality in Outcomes

This research summary describes a study that found the academic performance of new first-generation college students improved when they participated in a brief intervention that emphasized how their social-class backgrounds can be sources of challenge and strength in college—and provided students with strategies for how to navigate the transition to college successfully, and how these strategies might differ depending on their social-class background.

A Company I Can Trust? Organizations’ Mindsets About Ability Shape Women’s Experience of Stereotype Threat at Work

This research summary shares findings from studies examining how perceived mindsets of organizations can influence individuals’ behavior and experiences, particularly among people who face negative stereotypes in those contexts.

The Science of “Wise Interventions”: Applying a Social Psychological Perspective to Address Problems and Help People Flourish

This research brief summarizes a recent literature review of over 325 intervention studies in psychology, which shows how interventions that attend to peoples’ need for understanding, self-integrity, and belonging can improve outcomes. It discusses implications for policy and practice across a broad range of domains.

Walking in Their Students’ Shoes: Encouraging an Empathic Mindset about Student Behavior Transforms Teachers’ Discipline Practices

This research summary shares the results of a brief online exercise for teachers that reduced teachers’ use of punitive discipline and increased students’ trust in their teachers.

BARR—Building Assets, Reducing Risks—is a strength-based model that provides schools with a comprehensive approach to meeting the academic, social, and emotional needs of all students. Schools within the BARR Network harness the power of relationships and data to become more equitable, ensure that no student is invisible, and remove both academic and non-academic barriers to learning.



BARR™

Same Students. Same Teachers.
Better Results.



OUR MISSION

We believe all students, regardless of race, ethnicity, or economic status deserve a high quality education where adults know them, recognize their individual strengths, and help them thrive both personally and academically.

WHAT WE DO

BARR provides strength-based support to schools through professional development opportunities, extensive coaching, and a wide range of resources to implement the BARR model.

The model uses eight interlocking strategies that build intentional relationships, utilize real-time data, and enable schools to achieve concrete academic, social and emotional outcomes for all students.

BARR has been proven to create statistically significant impacts in 19 areas of academic performance and outcomes for students, teachers, and schools, including especially powerful results narrowing opportunity gaps for students of color and students from low-income families.

The BARR Network includes more than 100 schools across 15 states and DC, including established regional hubs in California, Maine, Massachusetts and Minnesota.

“My experience as a ninth grader has made me feel more open about who and what I am. I found people who relate to me very well and have found people who have changed my life for the better. Honestly, this is one of my best years of school yet.”

STUDENT

i3 BARR Validation Study Impact Findings, AIR

OUR CURRENT PRIORITIES

In the 20 years since the model was first developed, BARR has focused on researching its impacts through rigorous evaluations in diverse secondary school settings.

BARR is the only grantee to earn all three levels of the highly competitive Department of Education Investing in Innovation (i3) program (Development, Validation and Scale Up), allowing us to evaluate the impact integrating student supports to address barriers to learning.

Through i3, we have demonstrated the model's impact on teacher effectiveness and the model's replicability, and we have disseminated these effective practices through a national network.

THE BARR MODEL



Focus on the whole student



Hold regular meetings of the cohort teacher teams



Provide professional development for teachers, counselors, and administrators



Conduct risk review meetings



Use BARR's I-Time Curriculum to foster a climate for learning



Engage families in student learning



Create cohorts of students



Engage administrators

BARR builds relationships and cultivates a climate of belonging

Research shows that, through BARR, all students feel more supported, experience higher rigor and expectations, and are more engaged in school, which leads to higher academic performance. These results are particularly powerful for low-income and students of color.

Educator teams identify each student's strengths and center all conversations on how to leverage those strengths to help students build trusting relationships that empower them to thrive within and outside the classroom.

BARR is rooted in the belief that great teaching begins with understanding each student as a learner—and as a person.

BARR schools implement systems that ensure that every student is seen, feels valued, and has trusting, positive relationships with multiple adults in the building.

Sense of Belonging for Students of Color



Students of color in the BARR group **felt more supported by their teachers, believed their teachers had higher expectations of them, and were more engaged in school than students of color in the control condition.**

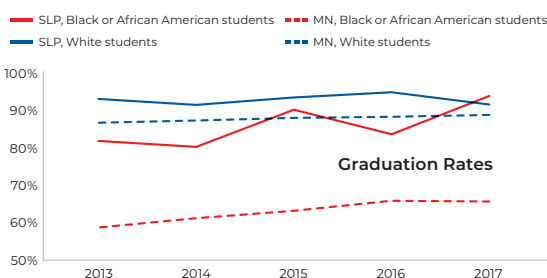
Student-Reported Outcome	N	BARR	Control	Difference	Effect Size
Supportive Relationships	2,002	51.3	47.8	3.5 ***	0.35
Expectations and Rigor	2,018	51.5	48.6	2.9 **	0.29
Student Engagement	2,002	50.5	49.1	1.3 ***	0.13

Notes: ** = statistically significant at the $p < .01$ level, *** = statistically significant at the $p < .001$ level

Source: <http://bit.ly/AIRstudentsurvey>

BARR Closes the Gap in Graduation Rates

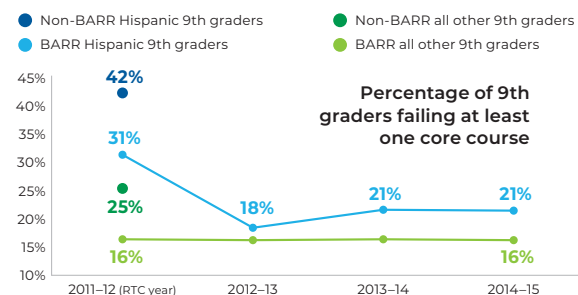
St. Louis Park Senior High School (SLP) in MN was the first school to pilot the BARR model, beginning in 1999. During that time, **SLP has closed its opportunity gap in graduation rates, surpassing persistent statewide disparities.** In 2014, it was recognized with ACT's National College and Career Transition Award.



Source: <http://bit.ly/BARRslpgrad>

Hemet High School Closes Opportunity Gaps

At Hemet High School (CA), an i3 development grant funded a **within-school randomized control trial (RCT)** demonstrating a **statistically significant positive impact on 9th grade students' standardized test scores, credits earned, grade point average, and overall failure rate.**

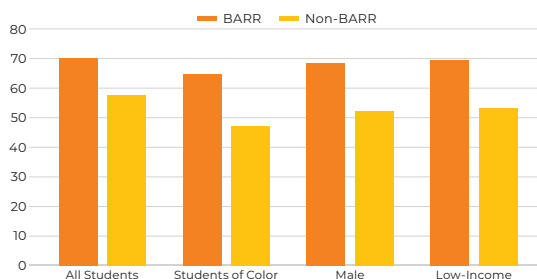


Source: <http://bit.ly/i3DevelopmentReport>

Students Passing All Core Courses (%)



An independent study of more than 1,800 randomly assigned 9th graders at six high schools found that **42% of non-BARR students failed at least one core course. For BARR students, that number fell to less than 30%.** The effects were especially large for students of color, male students, and students from low-income families.



Source: <http://bit.ly/AIRvalidationreport>

National Public Radio: How More Meetings Might Be The Secret To Fixing High School
<http://bit.ly/AllThingsConsideredBARR>

Hechinger Report: A little-known program has lifted 9th grade performance in virtually every type of school
<http://bit.ly/HechingerReportBARR>





The American Institutes of Research Evaluation of BARR

AIR is conducting two evaluations of the BARR model: an 11-school validation study (to be completed later this year) and a 66-school scale-up study (to be completed in 2021). The findings we present at the Mindset Scholars Network's event are from the first two cohorts (of three) of the validation study.

The impact evaluation of the BARR model is a within-school randomized control trial (RCT). In each participating school, some teachers implemented and experienced the BARR model in Grade 9 and some did not. Students were randomly assigned to these blocks of teachers, that is, either to BARR or to a business-as-usual control group. We measured the impact of this assignment on a range of outcomes. For the first two cohorts of schools, we found that:

- According to student surveys, BARR increased supportive relationships in school, student engagement, and teacher expectations for students. BARR students also reported receiving more challenging assignments than their control group counterparts. These impacts were especially pronounced for students of color and students eligible for free or reduced-price lunch.
- BARR also had positive and statistically significant impacts on academic achievement, including a reduction in course failures (see figure) and an increase in reading and math scores on the NWEA MAP assessment.

In addition to these student-level impact estimates, we found that BARR teachers had more favorable perceptions of their students' behavior in the classroom than teachers in the control condition. BARR teachers also were more willing to collaborate with their colleagues, were more likely to report using data to inform their instruction, felt more supported by school leadership, and reported greater self-efficacy. However, these teacher-level differences cannot be conclusively attributed to the BARR model because teachers were not randomly assigned to BARR or the control group.

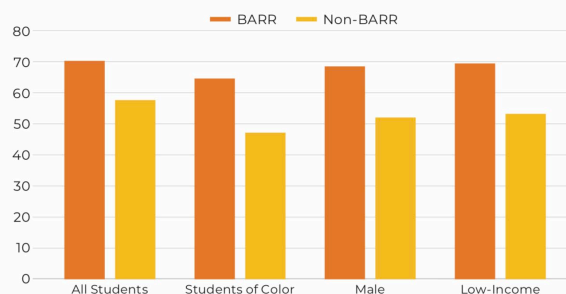


Hans Bos is a Senior Vice President at AIR. He specializes in the design and conduct of rigorous evaluations in education. His evaluation of the BARR model is one of many AIR projects in OII's Investing in Innovation (i3) program.

Students Passing All Core Courses (%)

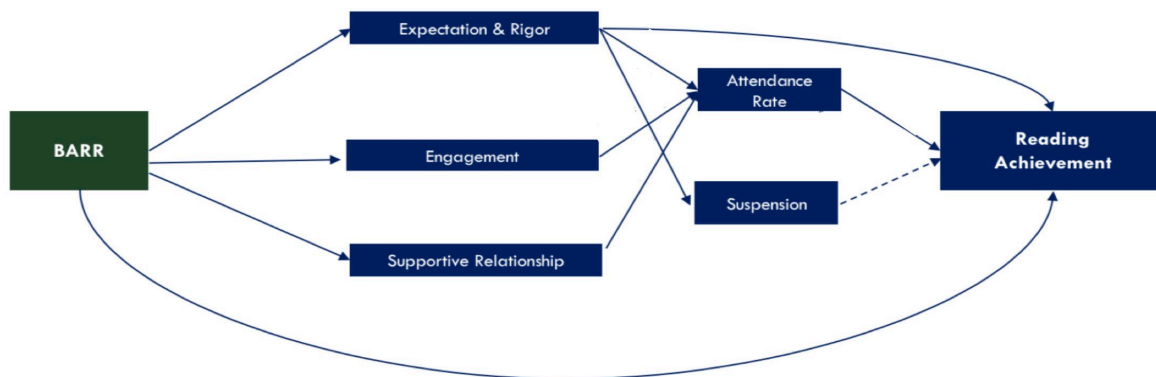


An independent study of more than 1,800 randomly assigned high school freshman found that more than **42 percent of non-BARR students failed at least one core course. For BARR students, that number fell to less than 30 percent.** The effects were especially large for students of color, male students, and students from low income families (as measured by eligibility for free and reduced-price lunch).



Source: Borman, T. H., Bos, J. M., O'Brien, B. C., Park, S. J., & Liu, F. (2017). i3 BARR Validation Study Impact Findings: Cohorts 1 and 2. Washington, DC: American Institutes for Research.

The Role of School Climate and Belonging. Both qualitative implementation research and quantitative mediation (pathway) analyses (below) found evidence that BARR's academic impacts were related to its impact on student reports of supportive relationships, expectations and rigor, and student engagement. We also found some evidence of additional mediation through increased attendance and reduced suspensions. Because it is not possible to randomize these non-academic outcomes directly, this is strong suggestive evidence that these school climate measures make a meaningful difference for students, especially during the 9th-grade transition year.



Mediation analyses suggest that relationships matter. A key component of BARR's impact on school climate was its impact on teacher-to-teacher relationships and cross-subject collaboration, which is often lacking in departmentalized high schools. By providing the structure, supports, and expectations for teacher collaboration, the BARR model enabled teachers to consistently apply a strength-based approach to their interactions with students and provided them with the information and intervention tools to prevent students from falling between the cracks. As in a strong and supportive family, students do better in an environment in which the adults have strong and supportive relationships as well. This is one way to build a culture of belonging in high schools.

Where We Need to Learn More

1. *How scalable is the BARR model? Can the model help turn around high schools facing the most severe challenges?* We will learn the answer to this question in our ongoing i3 Scale Up evaluation.
2. *How do the different BARR components work together to deliver the intended program effects?* We may be able to begin to untangle their various contributions through additional qualitative and quantitative implementation data.
3. *Can BARR improve student achievement in middle school as well?* We hope to get such an evaluation off the ground in a year or so.
4. *What is BARR's impact as a whole-school intervention?* So far, all our evidence about BARR is from within-school RCTs. The scale-up evaluation should give us more information to answer this question.

Equal Opportunity Schools (EOS)

Our mission is to ensure students of all backgrounds have equal access to America's most academically intense high school programs—and particularly that low-income students and students of color have opportunities to succeed at the highest levels.

Our work derives from the principle that “opportunity precedes achievement”. The “achievement first” narrative, so often used in the dispensation of educational opportunity, enshrines inequity by relying on definitions of success often unattainable by students stuck in cycles of low expectations. As long as we adhere to the notion that achievement dictates opportunity, we will find that the inequities endemic in our education system remain unbreakable.

For decades, public high schools across the country have systematically under-enrolled students of color and low-income students in Advanced Placement (AP), International Baccalaureate (IB), and other rigorous courses. This has led to substantial inequities in college preparation and access between students of color or low-income students, and their white, non-low-income classmates. These inequities amount to a systemic denial of access to positive long-term life outcomes such as post-secondary success, diverse and viable career pathways, and to agency and self-actualization.

Low-income, Black, and Latino/a students are about as likely as their peers to attend schools that offer AP or IB programs, yet the clear majority of AP/IB programs do not yet provide equal access. This means that missing students – three quarters of a million per year by our estimates – are stuck literally just across the hall from the education they need and deserve (we call them ‘missing students’). And these students are not anywhere close to maxing out their academic potential in non-AP/IB courses. Of and students of color and low-income students not in AP or IB, 85% report not yet being “challenged” or “very challenged” in high school.

The EOS Action For Equity (A4E) model has enrolled ~38,000 students of color and low-income students in Advanced Placement (AP) and International Baccalaureate (IB) classes. We have done so with partnerships in 29 states and more than 540 public high schools across 180 rural, urban and suburban districts. This year our active portfolio includes 345 schools in 108 school districts including New York City, Chicago, San Diego, San Francisco, and Montgomery County and Prince George's County.

In service of our mission, and in congruence with the Mindset Scholars Network, EOS provides partners with real time, actionable data and tools that highlight the importance of mindset rich definitions of readiness, while also positioning the mindset conversation in the context of building equitable learning environments that hasten mindset development.

For example, we provide our school partners with the following:

1. Lists of assets, mindsets and perceived barriers faced (as identified on our student survey, this year to be taken by nearly 400,000 students nationwide and taken over the last five years by over 1,000,000 individual students) to provide new measures for identification, make students and their voices and perspectives visible, and remove the barriers to accessing advanced courses.
2. Student Insight Cards to facilitate personalized understanding of each student's experience including nearly 40 data-points gathered through the student survey, teacher recommendations and achievement data.
3. Advocacy and Outreach strategies including conversations with student identified trusted adults; student panels; letters to parents; and opportunities to communicate an unwavering belief in students and help students feel seen, appreciated, and develop trust that adults in the building have their backs to take on new academic challenges.

The A4E model engages schools and districts in three phases of engagement. All EOS schools form Equity Teams for each site. Cabinet level district leaders engage early and often in the strategy, vision setting, resourcing and accountability necessary for equitable learning environments. Each school district is assigned a Partnership Director who coaches both the district and school teams through the A4E framework, including monthly site visits.

Phase 1, **Access Opportunity** places the emphasis on desegregation of advanced course opportunities, or, in schools with significant majorities of students of color and low-income students, on the urgency of increased opportunity to undertake advanced course work. Student and staff surveys are used to diagnose the dynamics of the equity eco-system, and “missing students” are identified. Belonging rich outreach and advocacy activities provide students entry points into registration for their first AP/IB class the following fall.

Phase 2, **Experience Success**, follows students in to their first AP/IB class, provides online mindset activations for students and staff, tracks grade and test score data and surveys students at the end of their first AP class experience. Schools continue the process of desegregation, new students are identified, and critical inflection points are utilized to drive larger conversations about the school and classroom-based experiences of students of color and low-income students.

Phase 3, **Extend Equity**, engages school and district leaders in Equity Leader Labs (ELLabs). The ELLabs embed partners in a network of schools and districts tackling similar problems of inequitable access and achievement in AP/IB. Topics covered in ELLabs include: implicit bias and explicit conversations about race; understanding the experiences of students of color and how to develop belonging rich environments; tests of change and improvement cycles that transformation the policies, practices and mindsets for equity; strategic planning and engagement in a compelling, equity rich vision for the following school year.

The Equity Leader Labs create a shared, creative and dynamic space for the action-oriented partnership of researchers, practitioners and educators in the service of equitable learning environments. Built on notions of improvement science and network learning, the ELLabs engage school equity teams and their district counterparts in shared action for equity. Through group learning experiences, facilitated workshops, data analytics and developmental activities, Lab participants develop the skills, habits and mindsets needed to engage as equity leaders in their building.

As we pilot the first formal ELLabs with 55 schools, across 9 cohorts this year, we are building the infrastructure for a formal researcher/practitioner Advisory Committee and engagement strategy. We seek to develop a dynamic structure for researcher and practitioner engagement directly in the ELLabs with educators. Our expectation is that this develops new ways of partnering, experimenting, learning, and solving deep educational inequities. Change does not come easy and systems of oppression do not yield by request. Disruption is possible, but disruption takes creative space to try- and fail. The ELLabs seek to experiment with collective learning opportunities that provide educators and researchers with the invitation to disrupt.

Our ELLabs pilot experience has so far been positive for school leaders. After our first session, 82% of our school leaders found the session useful or very useful for inspiring reflection and goal-setting for the year ahead (based on 118 respondents).

"I enjoyed the uncomfortable conversations at times. They helped me reflect on my own actions and considered how else it occurs within my school on a daily basis".

"I think having a safe space to delve into these topics was most useful. It showed us how to model discussions in our schools".

"We need to focus on our buildings and the students we serve and in order to do this well we need to better understand ourselves. The activities we did helped me to better understand myself and I had the opportunity to better understand my colleagues".

"I love the "modeling" of activities for teachers and principals/leaders. I like that ALL of the activities were extremely useful and relevant to the work we need to do at our sites".

Equity Leader Labs Session Summary

Session #1: Implicit Bias and Goal Setting

This session, a train the trainer environment, prepares staff to return to their schools to facilitate implicit bias activities with their peers. Participants engage in a retrospective on their school's multiyear journey with EOS to expand access and opportunity for students of color and low-income students and set goals for the year, including enrollment targets for AP/IB coursework.

Developmental Activity: In between session #1 and #2, participants facilitate one of three implicit bias activities with a group of their peers.

Session #2: Student Experience and Belonging

This session dives deep into the unique experiences of students of color and low-income students, as well as an overview of relevant belonging and learning research. Participants explore the dynamics of belonging rich learning environments and have opportunities to explore how these environments are or are not present in their AP/IB classes- using EOS Survey Data.

Developmental Activity: In between Session #2 and #3, participants engage in a half day student shadow.

Session #3 Equity Tests of Change

This session prepares participants to engage in tests of change to improve policies, practices and mindsets that sustain and extend equity. Participants explore core concepts of continuous improvement and select a 6-week test of change related to their school's unique equity journey.

As we pilot these labs we are working with researchers and practitioners to develop tests of change that can support our school partners efforts at typical equity 'pain points' along the AP access, experience, and success journey. We intend to provide tests of change to address inequities in advocacy and outreach for rigorous coursework, curriculum, classroom practices, assessment, and exam participation. Currently, three of these 'tests' involve partnerships with mindset scholars: with PERTS we are offering their Engagement Project; with the Chicago Consortium on School Research we are offering a culturally-relevant AP curriculum assessment tool; and, with Greg Walton and his research lab we are offering a wise critical feedback intervention. We expect to learn much from the application of these tests in different contexts about how to better leverage these resources. We also expect our school partners to learn more about the kinds of work they need to do to bring about systematic and sustainable change.

Developmental Activity: In between Session #3 and #4, participants engage in 'tests of change' explore and improve their equity eco-system.

Session #4 Strategic Planning for Equity

This session engages in 2019-2020 strategic planning for equity. Participants reflect on the year, evaluate outcomes, assess improvement projects and look ahead to next year. Participants create action plans to ensure that success continues and to continue to remove roadblocks that impede equitable access and opportunity.

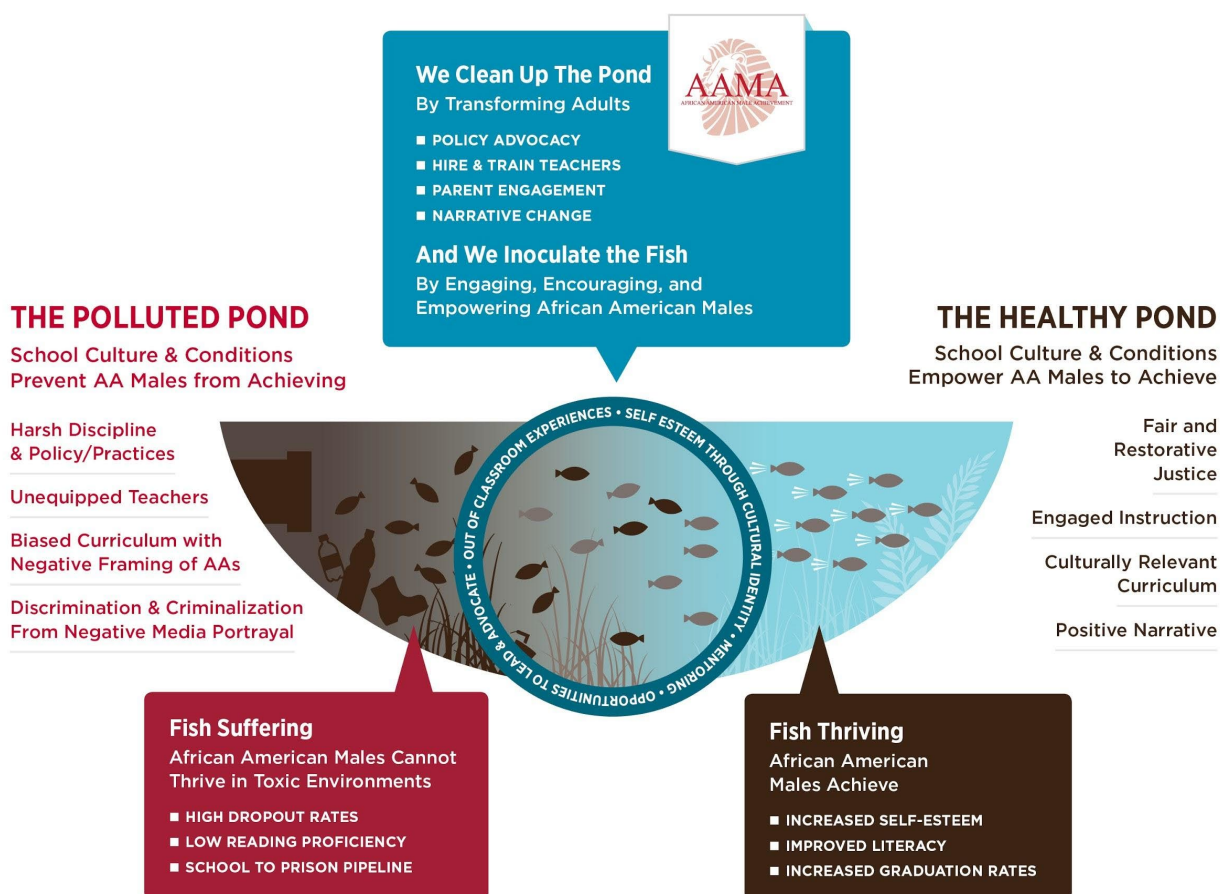
African American Male Achievement

AAMA was the first program in the nation to embed a culturally-centered curriculum to help close the educational achievement gap for African American boys. AAMA is part of the Office of Equity, within Oakland Unified School District, CA. <https://www.ousd.org/page/495>



OUR MISSION

AAMA is an ambitious project designed to dramatically improve academic and ultimate life outcomes for pre-school to 12th grade African American (AA) male students in Oakland, CA through creating systems, structures, and spaces that guarantee success. We are leading the school district by analyzing the patterns and processes that are producing systemic inequities for African American male students. OUSD's theory of action, Targeted Universalism, asserts that by transforming the system to support successful outcomes for OUSD's lowest performing subgroup, we will create a district that improves academic and social-emotional outcomes for all students.



The Problem

School conditions prevent AA male students from succeeding

AA male students are twice as likely to be suspended than white peers (for the same behavior)

15% of 4th grade and 11% of 8th grade AA males read at grade level (vs. 33% and 29% of all males, respectively)

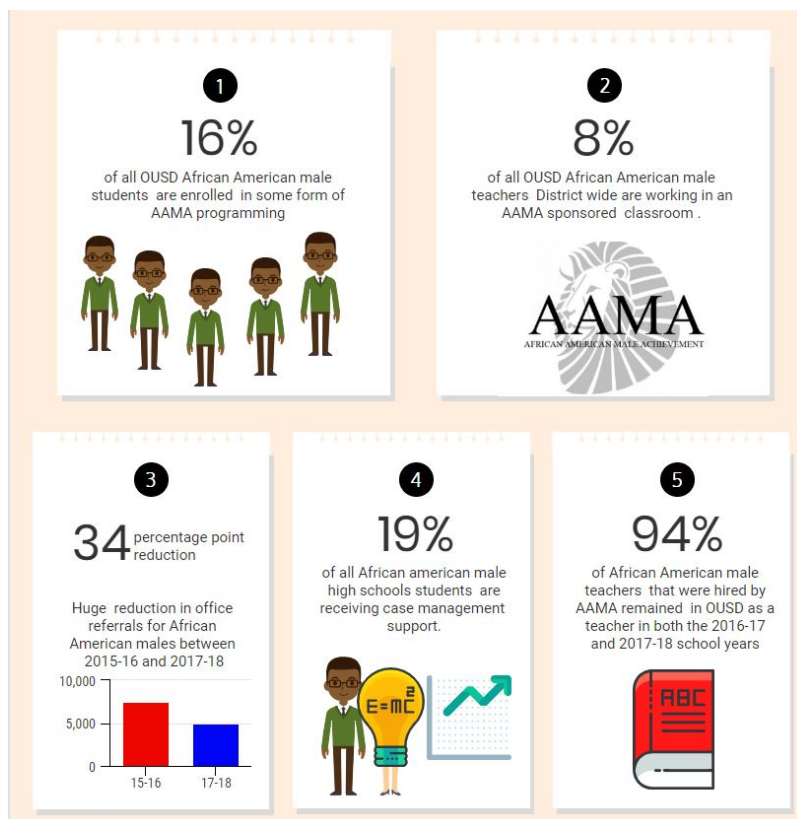
The Consequences

AA males perform better with AA teachers, but <2% of teachers are AA males

55% AA males graduate high school (vs. 71% all males)

White narrative curriculum creates negative internal identity in AA students

There are 500% more juvenile arrest of black males than white males



We are currently expanding our model to serve school districts across the United States via Kingmakers of Oakland, our new non-profit entity.

ADDITIONAL RESOURCES

[NY Times: Courses in Manhood for African American Boys](https://goo.gl/MQkCgB) <https://goo.gl/MQkCgB>

[SF Gate: Oakland Aims to Lift Students Who Are Young, Male, and Black](https://goo.gl/5Utd6C) <https://goo.gl/5Utd6C>

[Education Week: Educator Leads Campaign to Transform Lives of Black Boys](https://goo.gl/tmC4c2) <https://goo.gl/tmC4c2>



Kingmakers of Oakland

Kingmakers of Oakland (KOO) brings together a cross-functional, intergenerational and collaborative group of school district teams to address their problems of practice around African American male achievement. Our theory of action involves 'Healing the Fish while Treating the Toxic Ecosystem' - a set of strategies that transforms systems and structures using narrative change while simultaneously engaging and empowering students.

Kingmakers of Oakland was born out of the Office of African American Male Achievement within Oakland Unified School District and is expanding outside of the district as its own nonprofit organization. KOO treats the toxic ecosystem by working with district teams that take part in the Kingmakers of Oakland Learning Collaborative to learn about and apply 90-day learning cycles that test strategies in the areas of policy advocacy, hiring, training, and retaining teachers, parent engagement, and narrative change.

KINGMAKERS OF OAKLAND WORKS DIRECTLY WITH ADULT EDUCATORS TO TRANSFORM THE CULTURE AND CONDITIONS FOR AFRICAN AMERICAN MALES WITHIN SCHOOLS THEMSELVES AND TO CHANGE THE NARRATIVE SURROUNDING AFRICAN AMERICAN MALES IN SCHOOL. WE DO THIS THROUGH:

- Hiring, training, and retaining African American teachers to engage students more effectively and encouraging all teachers to have a better cultural understanding of African American male students.
- Policy advocacy to change school policy and practices to address suspensions and expulsions of African American male students and ensure that schools are intentional about the outcomes of these students.
- Engaging parents to ensure they are active in their child's education and are empowered to advocate for and support their child's needs.
- Changing the narrative by evolving school curriculum from a Eurocentric narrative to one that reflects the contributions of Africans throughout the diaspora.
- Constantly incorporating student voice to guide the work from the student perspective.

KINGMAKERS OF OAKLAND ENGAGES, ENCOURAGES, AND EMPOWERS AFRICAN AMERICAN MALE STUDENTS - OUR KINGS - DIRECTLY THROUGH:

- Building self-esteem through cultural identity, largely through our patented Khepera Curriculum, which allows students to develop an understanding of who they are as African American males, develop brotherhood among classmates, and boost their academic achievement through improving academic discourse, reading culturally relevant texts, and persuasive writing.
- Mentorship from older students, teachers, and other African American male role models through individual meetings, intergenerational mentoring, and community building at our ManUp! Conferences, Manhood Development classes, and Family Literacy Nights.
- Leadership and confidence building opportunities through being a mentor and learning how to advocate and be an ambassador for issues related to educating African American male students.

Our Focus on Belonging

Kingmakers of Oakland heals the fish (African American male students) while treating the toxic ecosystem (school districts). KOO works with cross-functional teams (city officials, school board members, administrators, principals, teachers, students, parents, and community members) to engage, encourage, and empower students (our Kings) through mentorship, building self-esteem through cultural identity, out of classroom experiences, and opportunities to lead and advocate. Our signature offering is the Manhood Development Program, which is comprised of classes taught by African American male teachers who form deep relationships with the students and help them navigate through school and life. Students are further empowered through our Khepera Curriculum, an engaging multi-media, culturally sensitive, academically rigorous and constantly evolving curriculum. Khepera is designed to increase a student's understanding of what it means and what it has meant to be an African American male in American society, both culturally and emotionally, while at the same time increasing their capacity for a rigorous academic career. The Khepera Curriculum can be tailored to meet local and state-wide graduation and college admissions requirements.

Our Current Priorities

As Kingmakers of Oakland launches as its own nonprofit organization, we are currently developing a network collaborative of three external school districts across the United States to bring educators together for regular convenings to share in lessons learned about African American educational achievement and the Kingmakers of Oakland curriculum and model.

By Fall 2019 we hope to be offering our Khepera Curriculum to students in at least 10 schools outside of Oakland and offering our 'Healing the Fish While Treating the Toxic Ecosystem' framework of 90-day continuous improvement cycles with a minimum of 4 districts across the United States.

Additional Resources

[Kingmakers of Oakland 5-part Documentary](http://kingmakersofoakland.org/watch) <http://kingmakersofoakland.org/watch>

[Annual Fall Forum Event Information](https://tinyurl.com/KOOForum) <https://tinyurl.com/KOOForum>

THOMAS S. DEE

Barnett Family Professor of Education
Stanford University

AREAS OF EXPERTISE

Education policy, quasi-experimental methods, economics of education

BIO



Thomas S. Dee, Ph.D., is the Barnett Family Professor at Stanford University's [Graduate School of Education](#) (GSE), a Research Associate in the Programs on Economics of Education, Health Economics and Children at the [National Bureau of Economic Research](#) (NBER), and a Senior Fellow at the [Stanford Institute for Economic Policy Research](#) (SIEPR). His research focuses largely on the use of quantitative methods (e.g., panel-data techniques, natural experiments, and random assignment) to examine innovative local practices and to inform contemporary policy debates. He currently serves as Faculty Director of the [John W. Gardner Center for Youth and Their Communities](#). From 2015 to 2018 he served as the GSE's Associate Dean for Faculty Affairs and as Director of the [Stanford Center for Education Policy Analysis](#) (CEPA). His recent studies have examined varied topics such as the effects of local immigration enforcement on students and schools, gender and racial equity in online learning spaces, and curricular reforms in the San Francisco and Oakland Unified School Districts.

WHY BELONGING MATTERS

A learning-aligned social identity, which includes belongingness, is a critical antecedent to unlocking our deep capacity for acquiring skills and knowledge, particularly in the formal, highly evaluative context of classrooms.

FEATURED PROJECT

Practitioners have long advocated culturally relevant pedagogy (CRP) as a solution to under-performance of students from underrepresented racial and ethnic groups. But the body of evidence on CRP has been almost entirely qualitative, making conventionally causal claims of its effect on student outcomes impossible, and divorced from consideration of the underlying psychological mechanisms. Tom posits that CRP uses many of the “active ingredients” that scientists have found to be particularly beneficial for students from underrepresented, marginalized social groups. For example, CRP may signal belongingness in the academic setting by affirming students' cultural identity in school and forewarning them about the pejorative effects of stereotype threat.

[Dee and Penner \(2017\)](#) report the first-ever study examining the causal effect of CRP (in this case, ethnic-studies classes) on ninth-grade academic outcomes. The researchers found

large, positive effects of a ninth-grade ethnic studies course targeted at academically at-risk students in San Francisco Unified School District. The program substantially improved key predictors of graduation, including attendance, grades, and credit accumulation in ninth grade. Specifically, they found that credibly random assignment to this course increased ninth-grade student attendance by 21 percentage points, raised GPA by 1.4 grade points (the equivalent of moving from a C- to a B), and increased credits earned in ninth grade by the equivalent of roughly four courses.

In an early-stage project, Dee and colleagues are examining the *longer-run* impact of the ethnic-studies course on outcomes that include high-school completion and college readiness. Examining the longer-run effects of this innovative curriculum and pedagogy is critical for understanding the challenges of sustaining and building upon the near-term success of the program. Dee and Penner are also studying another innovative, culturally relevant program, the African American Male Achievement (AAMA) program in the Oakland Unified School District (OUSD). Within the context of a conventional course and a culturally relevant curriculum and pedagogy, the AAMA emphasizes broad academic mentoring including leadership and character development activities, peer-based supports, personalized guidance (e.g., transcript evaluation, college and career counseling), and field trips that emphasize culture and awareness of colleges and careers.

ADDITIONAL RESOURCES

Dee T.S. and Murphy, M. (2018). “Vanished Classmates: The Effects of Local Immigration Enforcement on Student Enrollment,” with Mark Murphy, NBER Working Paper No. 25080.

Dee, T.S. “When police team up with ICE, it ripples into classrooms,” *Los Angeles Times*, November 1, 2018.
<http://www.latimes.com/opinion/op-ed/la-oe-dee-ice-287g-schools-20181101-story.html>

Baker, R., Dee, T.S., Evans, B., & John, J. (2018). “Bias in Online Classes: Evidence from a Field Experiment,” with R. Baker, B. Evans, and J. John. CEPA Working Paper No. 18-03.

Dee, T.S. (2005). “A Teacher Like Me: Does Race, Ethnicity or Gender Matter?” *American Economic Review* 95(2), pages 158-165.

Dee, T.S. & Gershenson, S. (2017). “Unconscious Bias in the Classroom: Evidence and Opportunities,” Mountain View, CA: Google Inc. Retrieved from <https://goo.gl/O6Btqi>.

Dee, T.S. & Gershenson, S. (2017). “The insidiousness of unconscious bias in schools,” Brown Center Chalkboard, Brookings Institution, March 20, 2017.
<https://www.brookings.edu/blog/brown-center-chalkboard/2017/03/20/the-insidiousness-of-unconscious-bias-in-schools/>

Dee, T.S. & Penner, E. (2017). “The Causal Effects of Cultural Relevance: Evidence from an Ethnic Studies Curriculum,” with Emily Penner, *American Educational Research Journal*, 54(1), 127-166.



Motivate Lab

OUR MISSION

60

To improve people's lives through rigorous motivation research. Our focus is to understand the learning mindsets that promote individuals' learning, growth, achievement, and wellbeing. We use those insights to develop evidence-based solutions that can be applied across educational, extracurricular, and work contexts.

LEARNING MINDSETS

Learning mindsets are our beliefs and perceptions about learning and school. They shape how we interpret difficulty, and research shows they are critical predictors of academic performance, persistence, and motivation. We are primarily interested in three main learning mindsets.



GROWTH MINDSET:

Belief that intelligence can be developed



PURPOSE AND VALUE:

Belief that schoolwork is valuable because it's personally relevant



SOCIAL BELONGING:

Belief that one is connected to and respected by peers, cared for by teachers and mentors, and fits in with the culture

OUR RESEARCH PROCESS

**SCIENTIFIC
RIGOR**



**DESIGN
PRINCIPLES**

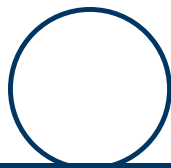


**STRONG
PARTNERSHIPS**



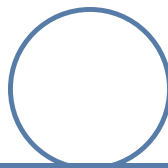
**SOLUTION-FOCUSED,
ACTION-ORIENTED
RESEARCH**

By combining psychological science with design thinking and researcher-practitioner partnerships, we instigate positive change in institutions, from the individual to the policy level. We utilize best practices in design-based research, randomized control trials, and improvement science to find optimal solutions to meet our partners' needs.



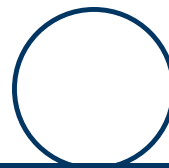
EMPATHIZE & LEARN

Understand the problem and context by listening to stakeholders



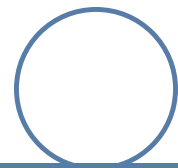
SYNTHESIZE & PLAN

Consolidate learning and develop next steps



PROTOTYPE & TEST

Customize interventions and strategies informed by data, feedback, and theory



ADOPT & INFUSE

Adopt effective strategies and responsibly scale to other contexts

OUR PARTNERS

Carnegie Foundation for the Advancement of Teaching ALBEMARLE HIGH SCHOOL
CHATTANOOGA STATE COMMUNITY COLLEGE **University System of Georgia**
NYC DEPARTMENT OF EDUCATION TUBINGEN UNIVERSITY **Character Lab** Valencia College
Tennessee Board of Regents CALPOLYPOMONA Florida Virtual School **University of Virginia**
San Diego State University Nashville State Community College
Southwest Tennessee Community College Georgia Southwestern State University

For more information visit motivatelab.org



CHALLENGE

36%

ADULTS ACROSS
TN & GA HOLD A
POSTSECONDARY
DEGREE

PARTNERS

Tennessee Board of Regents and
University System of Georgia

WHAT WE'RE DOING

Data collection with students from 66
institutions--including community
colleges, technical schools, and 4-year
universities; prototyping and testing
customized direct-to-student
interventions

FOCUS

Students traditionally
underrepresented in higher ed
(1st-generation, adult learners,
racial and ethnic minority)

LOOKING AHEAD

Cross-state networked improvement
community to develop and test
mindset-supportive practices;
prototype context-focused
interventions at the classroom,
institution, and policy level

CHALLENGE

54%

US COMMUNITY
COLLEGE
STUDENTS DON'T REACH
COLLEGE READY MATH
PROFICIENCY EVEN
WITH REMEDIATION

REMOVING BARRIERS TO MOTIVATION IN COMMUNITY
COLLEGE MATH

PARTNER

Valencia College

WHAT WE'RE DOING

Growth mindset and utility-
value interventions with over
12,000 remedial math
students

FOCUS

Underprepared students (students
in developmental math courses)

LOOKING AHEAD

Explore students' longitudinal
outcomes, such as GPA, major path,
and career trajectories; develop
faculty training materials

CHALLENGE

37%

GAP BETWEEN AVG GPA
OF STUDENTS OF
COLOR AND STUDENTS
FROM WELL-REPRESENTED
GROUPS AT OUR PARTNER
SCHOOL

PROMOTING BELONGING DURING THE TRANSITION TO HIGH SCHOOL

PARTNER

Albemarle High School

WHAT WE'RE DOING

Novel video intervention targeting
perceptions of belonging among
rising 9th graders

FOCUS

Traditionally underrepresented
students (e.g., students of color)

LOOKING AHEAD

Protocol for schools to create their
own belonging videos; faculty training
on incorporating belonging videos
into classroom activities

CHALLENGE

50%

AVERAGE DECLINE IN
SCHOOL ENGAGEMENT
BETWEEN MIDDLE AND
HIGH SCHOOL IN US

PROMOTING VALUE-DRIVEN LEARNING IN K-12 CLASSROOMS

PARTNER

Character Lab
(characterlab.org/buildconnections)

WHAT WE'RE DOING

Teacher-led activity to help
students make their own
connections between their goals
and course content

FOCUS

Students who have low expectations
for success and/or low perception
of the value of the course

LOOKING AHEAD

Widely disseminate activity and
support materials; teacher training;
research-practice partnerships to
further test the efficacy of the activity

CHALLENGE

10 MILLION

KIDS ATTEND CAMP EACH
SUMMER, BUT LITTLE IS
KNOWN ABOUT SKILLS
TRANSFER

MINDSET TRANSFER: OUT-OF-SCHOOL TO SCHOOL

PARTNER

American Camp Association & Camp
Champions

WHAT WE'RE DOING

Mixed-methods and experimental
research examining how campers
and counselors support transfer,
and how often transfer naturally
occurs

FOCUS

Students from economically
disadvantaged families

LOOKING AHEAD

Isolate and experimentally test
factors that affect transfer; assess
transfer between other educational
and out-of-school contexts



hipi

OFFICE OF HIGH IMPACT
PRACTICES AND INNOVATION

@ **SOUTHWEST**
TENNESSEE COMMUNITY COLLEGE

STUDENT ENGAGEMENT OUTCOMES:



BELONGING



MINDSET



SELF-REFLECTION

Southwest Tennessee Community College (Southwest) is a comprehensive, open-access, culturally diverse, public two-year college, committed to meeting the educational needs of individual students, communities, and employers in Shelby and Fayette counties. Southwest welcomes a diverse student population with a wide variety of backgrounds, abilities, interests, levels of education and economic circumstances. More than half of all students are first-generation, minority, and Pell Grant eligible. 74% of first-time, full-time students require co-requisite learning support (remediation).

Over the last two years, Southwest has worked diligently to develop, support, and implement a dedicated center for high impact practices (HIPs). The Office of High Impact Practices and Innovation (HIPI) promotes evidenced-based, equitable and high-quality student-centered high-impact pedagogies and educational activities in the classroom and beyond. A high impact practice is a pedagogical approach that requires an investment of time and energy over an extended period that has unusually positive effects on student engagement, especially for underrepresented students of color and first-generation students (Kuh, 2010).

As an institution, we affirm students must interact with faculty, other students, and staff on a campus because learning does not occur in a vacuum. HIPI supports *Complete College* and *Drive to 55* initiatives in Tennessee and the Tennessee Board of Regents' focus on high impact practices to create more globally aware, solution-oriented, and workforce-ready students. HIPs are not just about faculty development, retention and graduation rates; they are about helping to make higher education more equitable and effective for all students.

The first office of its kind in the state of Tennessee, Southwest created HIPI to identify, organize and embed high-quality HIPs at both the course and guided pathways level. The HIPs are: **Advising, Certifications, Service Learning, Study Abroad, Honors Education, Learning Communities, Mindset, First-Year Seminars/Experience, Undergraduate Research, Work-Based Learning, and Technology Enhanced Learning.**

STRATEGIC INITIATIVES AND PROJECTS

	THE CHALLENGE	WHAT WE'RE DOING
SENSE OF BELONGING	58% of first time, full tie freshmen report not feeling a sense of belonging to the college.	The College's Quality Enhancement Plan (QEP) focuses on learning communities and aims to create a carefully crafted experience for first-time, full-time students in the form of learning communities. Success of our learning communities is measured by the degree to which students exhibit increasing levels of belongingness with each other through classroom learning community activities and with the institution (faculty, staff, and resources) through co-curricular learning activities supporting learning communities.
MINDSET	Students' beliefs and perceptions about learning can negatively shape how they interpret difficult situations in the classroom and at college.	We are partnering with The Motivate Lab at the University Of Virginia Curry School Of Education to infuse in-class interventions targeting growth mindset in first-year seminars and co-requisite math courses.
SELF-REFLECTION	Students often struggle to understand their place and responsibility to college, profession, global society, and life.	We are a campus partner of the National Association of System Heads Taking Student Success to Scale (TS3) collaborative of higher education systems and campuses.

LaDonna R. Young
 Dean of Humanities, Social Sciences, and Mathematics
 The Office of High Impact Practices and Innovation
lyoung@southwest.tn.edu



The College Transition Collaborative

Leveraging Psychology to Create Equitable Learning Environments from Orientation to Graduation

The mission of the College Transition Collaborative (CTC) is to create higher education learning environments that foster equitable student outcomes by bridging psychological research and practice. We work to identify and understand key points in the college journey in which a student may be at risk for thinking they do not belong or cannot succeed in college, and to develop effective, scalable psychologically attuned approaches colleges can use to help students reach their full potential.

CTC:

- Works with researchers and practitioners to **identify and map pivotal moments of transition or difficulty throughout college** that may cause students to question their belonging or potential, and where schools can intervene through existing channels.
- **Builds awareness and understanding** for how students' psychological experiences can impact well-being and achievement throughout their college journey among administrators, staff, and faculty **by illustrating these critical points from orientation to graduation.**
- **Connects practitioners and researchers with each other to develop and test evidence based, psychologically attuned tools and resources** designed to address these pivotal moments, including diagnostic tools, direct-to-student programs, and administrator toolkits.
- **Partners with key intermediaries to scale effective approaches.**

CTC helps us re-center our work on students' experience...through evidence-based practices, which we need to meet our goals.

CTC Partner Administrator

Programs and practices developed by CTC researchers have been implemented for more than **100,000 students** at approximately **350 colleges and universities** across the U.S. and have helped support student well-being, engagement, achievement, and completion.

Example opportunities for schools to support students' psychological experience of college:

Transition into College <i>"I have become more and more anxious about my arrival on campus. I worry that it may be difficult to find my niche and to find people who I really connect with."</i>	<ul style="list-style-type: none"> - Do welcome messages communicate to students that diverse kinds of students belong in college, or do they signal that only some kinds of people belong and others don't? - Do restrictions placed on transfer students lead students to anticipate that they won't belong or do well in college, or that their prior education is de-valued?
Points of Difficulty <i>"I felt incredibly alone. No one seems to struggle, at least not to the degree I am."</i> Note: quotes in italics represent real quotes from student responses.	<ul style="list-style-type: none"> - How do large class sizes or explicit attempts to "weed out" students in gateway courses for certain majors impact students' feelings of belonging or academic potential? - Do communications about academic setbacks communicate that faculty and the college care about their success and believe they can improve?
Throughout College <i>"You typically feel uncomfortable and out of place when you are suddenly surrounded by people who don't look like you and who don't come from similar backgrounds."</i>	<ul style="list-style-type: none"> - How can schools help foster positive intergroup relationships? How can schools foster the development of more diverse social networks? How do schools message valuing of diversity to students, and how does this impact intergroup relations?

Why Do Students' Psychological Experiences Matter for College Completion?

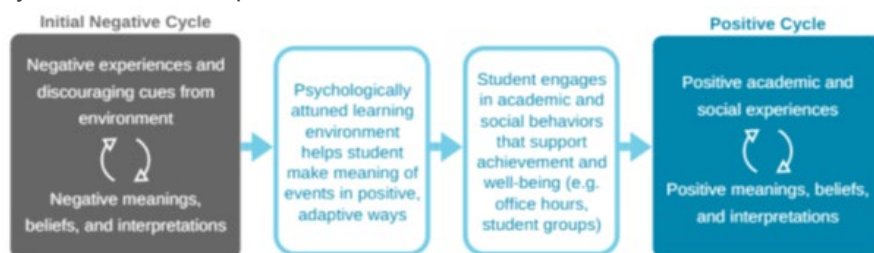
Despite enormous investments by institutions of higher education to provide academic and financial supports for their students, four out of 10 new 4-year college students do not graduate within six years. Completion rates are even lower for students of color, first-generation college goers, and students from low income backgrounds. Over a decade of research shows that students' psychological experience of college can critically affect their academic outcomes. By creating learning environments that help students feel competent, valued, and connected to others, colleges and universities can help more students persist through the inevitable challenges of higher education.

Although all students can wonder about their potential to belong and succeed in college, this burden is not equally felt. For students who are underrepresented in higher education, already wondering, "Can people like me belong and succeed?", discouraging or ambiguous events (e.g., "Why did my professor give me critical feedback?") make it easy and reasonable to infer "I don't belong" or "I can't do this." These inferences can then discourage students from asking for help, from attending office hours, from joining study groups, and from making friends — depriving students of key social and academic supports and ultimately contributing to persistent inequality in higher education.

How can we change school practices and communications to better support students in pivotal moments throughout college?

Schools send students messages every day, both explicitly in communications and implicitly in the design of policies, programs, and practices. These messages include representations of the school community as a whole--e.g., who belongs, what kinds of students are typical and valued--and of specific challenges--e.g., early struggles in gateway STEM classes, or of academic probations. These messages are powerful shapers of students' experience--and powerful opportunities to help students make sense of common challenges in positive, adaptive ways--thus interrupting the negative cycle of worry that contributes to inequality (See Figure 1 below). By increasing the likelihood that students make use of the opportunities and supports available to them, psychologically attuned approaches complement broader efforts including improvements in pedagogy, financial aid, and academic resources.

Figure 1: Psychologically attuned learning environments can interrupt and reverse negative recursive cycles of student experience.



Source: Adapted from Walton & Wilson (2018). *Wise Interventions*; Yeager et al (2016). *Teaching a lay theory before college narrows achievement gaps at scale*.

Join us in learning more.

Please visit <http://collegetransitioncollaborative.org> and [sign up for our newsletter](#) to access current resources, receive the latest updates on our work, and stay in touch to contribute your perspectives. We look forward to learning together.

Indiana University-Purdue University Indianapolis



As Indiana's premier urban public research university, IUPUI believes in the power of transformation. We are committed to providing educational opportunities that transform the lives of our students, our community, and the changing world around us. Founded in 1969 as a merger between two world-class public institutions, IUPUI's mission is to advance the state of Indiana and the intellectual growth of its citizens to the highest levels nationally and internationally through research and creative activity, teaching and learning, and civic engagement. IUPUI promotes the educational, cultural, and economic development of central Indiana and beyond through innovative collaborations, external partnerships, and a strong commitment to diversity. IUPUI has been awarded the Excellence in Diversity award from *Insights in Diversity* for the past seven years.

We envision IUPUI as leading urban research institution predicated on undergraduate learning and success. We are investing in programs to ensure students feel comfortable and have access to growth opportunities. For instance, in spring 2016, the **Welcoming Campus Initiative** was launched to ensure students, faculty, staff, and visitors feel welcomed and a part of our community. One million dollars has been committed to support projects that advance IUPUI as a welcoming campus. Additionally, in 2018, IUPUI launched the **Institute for Engaged Learning** to build on IUPUI's already extensive utilization of high-impact practices (HIPs). The explicit goal of the institute is to ensure equitable access to high-impact practices while also further expanding the use of HIPs across the curriculum.

IUPUI serves more than 28,000 students, of whom over 20,000 are undergraduates. IUPUI offers more than 350 undergraduate, graduate, and professional programs from Indiana University and Purdue University. Twenty-seven percent of students are racial/ethnic minorities; 33% are first-generation college students, and over **40% are Pell Grant eligible**. Our students support the Indianapolis community through over 1,000,000 hours of time with community partners each year.



Investing in Student Success & Cultivating Belonging and a Growth Mindset

Transformative Education Curriculum: This innovative approach connects growth mindsets and deep learning behaviors associated with educational success. Students practice and master intrapersonal awareness, reflection, and intentionality practice as well as emotional intelligence, vitality, purpose, and well-being. **Since 2007, nearly 77% of student participants from under-resourced and under-served backgrounds have graduated or are still enrolled, while almost 65% have graduated within six years.** More than a third have gone on to graduate school. Contrast this with Pell Institute data from 2015 that shows a 21% bachelor's degree attainment rate by age 24 for those from the lowest income quartile who enter college.

Support for Foster Youth: A new intervention for former foster youth uses the Transformative Education curriculum coupled with intensive mentoring and community building to support college success. One year outcomes showed retention rates 5% above that of the campus average. An emerging relationship with the state foster youth agency will create a pipeline that increases preparedness and enrollment in college.

Social Belonging (New Freshmen): IUPUI administered PERTS Social-Belonging intervention to all incoming freshmen for fall 2017. Students create IUPUI social-belonging video stories as part of a first-year seminar curricular module focusing on normalizing challenges associated with college. Items related to belongingness, hope, and growth mindset are part of surveys administered to new students at summer orientation and one month into the first semester. Data are used to measure changes during the first semester as well as to identify students needing additional support.

Social Belonging (Academic Probation): IUPUI is a research site for College Transition Collaborative's academic standing project. In addition to collecting data on retention and grade point average, we are tracking participation in a campus academic probation intervention (mentoring) and timing of student outreach to an academic advisor to determine if student behavior changes as a result of a modified academic probation notification letter.

Growth-Mindset Curriculum: IUPUI has developed growth-mindset curricular modules for use in first-year seminar courses. In a quasi-experimental design, students exposed to curriculum retained high levels of growth-mindset compared to declining mindset for students who were not exposed to curricular modules.

Contact:

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Executive Associate Dean
University College
cbuyarsk@iupui.edu

JASON OKONOFUA

Dr. Jason Okonofua is a social psychologist in the Psychology Department at the University of California at Berkeley. He is an expert in stereotyping, threat, bias, and scalable psychological interventions. The *Perspectives Experience Program* is designed for school districts that want to implement Dr. Okonofua's empathic discipline intervention.



Scientific Approach to Mitigating Discipline Problems: *Perspectives Experience Program*



What is it? The program involves online development workshops designed to help administrators and teachers better understand how to make all of their students feel comfortable and motivated at school. It also involves online workshops to help student better understand their development and navigate relationships with teachers. The program is designed to improve mindsets about misbehavior and to protect the quality of teacher-student relationships. Teachers and students participate in two online modules (total ~70 minutes to complete) where they are invited to engage with research articles and stories about the effectiveness of valuing student's perspectives and need for teachers' support, especially for students who are otherwise likely to be viewed as troublemakers (e.g., African American students, students from poverty, etc.). The typical implementation timeline is as follows.

Spring (Early April-late May)

- *Administrator & Teacher Assessment:* Administrators and teachers complete an initial online assessment of their implicit theories about student behavior, motivation, and achievement.

Mid-Fall (late September-early November)

- *Parent Letters:* Schools send home parent information letters (provided by PEP team) to inform parents that their children will complete a brief survey unless they opt-out.
- *Student Survey:* Administrators or teachers organize times for classes of students to complete an online survey designed to learn about their school experiences (20 minutes)
- *Teacher Session:* All math or science teachers complete online activities. (45 minutes)

Mid-Winter (late January-early February)

- *Teacher survey:* All math teachers complete a follow-up survey (30 minutes)
- *Student survey:* Students complete a follow-up survey (20 minutes)
- *1st semester school records:* The school administration provides PEP team with participating academic records. This is how we will determine the success of the program. We will not request personally identifiable information.

Spring (June)

- *2nd semester school records:* The school administration provides PEP team with students' academic records.

What are the research-based results? In an initial implementation, Perspectives Experience Program (PEP) was employed at middle schools in three districts that served thousands of students. By the end of the school year, it halved student suspension-rates, from 9.6% to 4.8%, across all the schools. It also bolstered the perceived respect the most at-risk students, those who had been suspended in the prior year, observed from teachers. PEP is now being tested in implemented in districts across the United States that serve nearly half a million students. Further, this program now tests a component to benefit administrators in addition to teachers. This work has been funded by organizations like *Google*, published by premier scientific journals like the *National Academy of Sciences*, and covered in popular press like *The New York Times* and *The Wall Street Journal*.

OUR DISTRICT'S AIM

A Systemic, Restorative Approach to Building Positive School Culture and Climate that Facilitates High Student Achievement (2018-2019)

PINELLAS COUNTY SCHOOLS (PCS), LARGO, FLORIDA



This year, Pinellas County Schools (PCS) has taken a more diverse approach to help schools embrace and incorporate empathic practices into their school climate efforts. Within a Multi-Tiered System of Supports (MTSS) framework, the integration of Positive Behavioral Interventions and Support (PBIS), Restorative Practices, and Social and Emotional Learning (SEL) allow for multiple, interconnected paths that bring system coherence to equity and school culture and climate. A strong, coherent system of supports, aimed at the whole child-community-school, attenuates opportunity gaps that are DEEPLY rooted in punitive mindsets, inequitable and ineffective practices that result in disproportionate discipline and disparate exclusionary practices.

The What

Within a PBIS framework, PCS will implement Restorative Approaches/Practices that focus on building effective systems, structures, and processes that create opportunities to deepen connections and relationships among individuals in the school community and facilitate high achievement for all students.

The How: Using Restorative Practices to Promote School Connectedness

Restorative Practices promote school connectedness, which is the belief of students that adults and peers in the school care about their learning as well as about them as individuals and is a key factor in student academic success and the development of social and emotional wellbeing.

Critical requirements for feeling connected include high academic rigor and expectations coupled with support for learning, positive adult-student relationships, and physical and emotional safety (Blum, Robert, 2005); Critical Pillars of Effective Conditions for Learning (Osher 2008).

Students experience success in school when they have a strong sense of connection and belonging to the school community and have opportunities and outlets to develop social and emotional wellbeing as a part of their academic experiences. The following restorative approaches provide such opportunities: restorative dialogue (affective statements, questions, and conferences) and restorative circles (opportunities for building community and promoting accountability).

Additionally, restorative approaches provide opportunities to focus on social and emotional learning strategies that encourage reflection and self-awareness and create opportunities to practice effective social skills both individually and in groups. Social skills increase academic performance because they allow students to participate productively in classroom activities that foster learning. By acting as “academic enablers” in school environments, social skills help students grapple with the academic skills that are essential to academic competence or mastery. Academic enablers, including social skills, study skills, motivation, and engagement, are student attitudes and behaviors that allow a student to be involved in and benefit from classroom instruction (DiPerna & Elliott, 2002). The strength of a student's academic enablers can improve or hinder academic success. To prevent academic failure, students need encouragement and explicit instruction in these areas (DiPerna, 2006; DiPerna & Elliott, 2002).

An Integrated Approach

Proactive and Preventative Approaches: Alignment of Frameworks

- A Systems Approach to Achieving Equity
- A Culturally Responsive Way-of-Work
- Critical Pillars of Effective Conditions for Learning

Foundations of Restorative Practices

- Restorative Practices At-A-Glance
- Restorative Principles
- Defining Restorative
 - Social Discipline Window
 - Fair Process
 - Restorative Continuum

Creating A Restorative Climate and Culture

- Building Relationships and Community
 - Varieties of Circle Formats
 - Teaching Skills: Social Emotional Learning with Classroom Circles

Integration of Social Emotional Learning (SEL)

- Foundations of SEL
- Guidance from the Experts: The Evidence Base for How We Learn
- The Interconnected Domains of SEL
- Creating Conditions for Equitable, Rigorous Instruction, and Learning
 - Crosswalk Between Marzano Professional Teaching Framework & 10 Teaching Practices That Promote SEL Skills Building
 - Approaches to SEL Instruction
 - Explicit Teaching of SEL: Teaching students social and emotional competencies across the five core competency clusters
 - Infused Teaching of Social and Emotional Learning
 - Integration of skill instruction and practices within the context of an academic curriculum
 - Linking SEL to academic content standards
 - Teaching SEL Through Restorative Classroom Management
 - Teacher Instructional Practices: Using Restorative Approaches to Teach and Practice Social and Emotional Learning (Planning Ideas and Sample Activities)

70

EMPLOYEES TRAINED IN
DAY 1 "INTRODUCTION
TO RESTORATIVE
PRACTICES" AND DAY 2
"USING CIRCLES
EFFECTIVELY" AS OF
OCTOBER 15, 2018



150+



Principals
Assistant Principals



District Administrators
Superintendents
Teaching & Learning
MTSS Specialists



International Institute for
Restorative Practices
Licensed Trainers



School Psychologists
School Counselors
Behavior Specialists

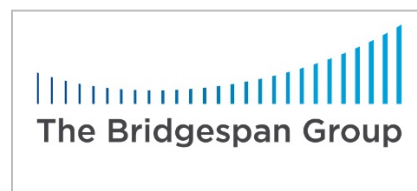


Other School
Stakeholders

A special thanks to Dr. Jason Okonofua, UC Berkley, for his research and guidance on improving mindsets about behavior, and enhancing teacher-student relationships.

THE BRIDGESPAN GROUP

Bridgespan helps mission-driven organizations and philanthropists to advance their learning and accelerate their impact.



OUR MISSION

We work to build a better world by strengthening the ability of mission-driven organizations and philanthropists to achieve breakthrough results in addressing society's most important challenges and opportunities.

WHAT WE DO

The Bridgespan Group is a global nonprofit organization that collaborates with mission-driven leaders, organizations, philanthropists, and investors to break cycles of poverty and dramatically improve the quality of life for those in need. We are passionate about helping to find solutions to ensure equal opportunity and core human and civil rights.

Our services include consulting to nonprofits and philanthropists, leadership development support, and developing and sharing insights—all with the goal of scaling social impact. What we learn from collaborating closely with social sector leaders, complemented by rigorous research, we share broadly to advance social change.

The "bridge" in Bridgespan denotes our ability to connect and learn from the social and business sectors, donors and grantees, and ideas and practice. We pursue this work with humility, rigor, and focus on impact; and with a staff that is both exceptionally talented and deeply experienced in the social sector.

OUR CURRENT PRIORITIES

Strategic Advisory Work. Bridgespan is privileged to have collaborated on more than 1,000 engagements with leading mission-driven organizations, leaders, movements, philanthropists, investors, and foundations across a wide range of strategy and philanthropy consulting engagements to help scale their social impact.

Multiyear Initiatives. Along with our ongoing research and publishing work, we also focus on a narrower set of issues, for multiple years, to try to effect real change. To date we have launched four multiyear initiatives—Big Bets, Pay What It Takes (focused on the nonprofit starvation cycle), Transformative Scale, and Impact Investing.

Leading for Impact and online learning. Leading for Impact® is a two-year consulting program that helps executive teams from ambitious nonprofits pursue strategic opportunities and build capacity to improve their performance. We provide the teams with coaching and training in strategic management concepts and tools. In an

effort to support even more organizations, we have also launched an initial set of online courses that enable executive teams to engage when they are ready with online lessons and guided team activities.

India and Global. We have had the privilege of working with some of India's leading philanthropists and NGOs, giving us the opportunity to contribute to India's social sector and to learn from it. Indian organizations hold many lessons for leaders in the United States and around the world.

OUR FOCUS ON BELONGING

Bridgespan has supported nonprofit and research organizations as well as funders focused on belonging to develop strategic agendas, plans, and initiatives. Alongside this work with individual organizations, we are also looking across the field to identify common themes, opportunities, and insights relevant for leaders in this work. For example, a few years ago, we convened practitioners, field leaders, and funders at the frontiers of the fields of social and emotional learning, mindsets, and character development, providing a forum in which participants from these fields could learn from one another and identify challenges and opportunities. Themes and the lessons learned are captured in this Stanford Social Innovation Review article, co-developed with Paul Tough: [Rethinking How Children Succeed](#).

We are currently conducting research on what it takes to build educator capacity to create the supportive relationships and learning environments necessary for students to feel a sense of belonging, as well as implications for funders in this space. We plan to publish our findings early next year.

Furthermore, as an organization we are very committed to and making significant internal investments in diversity, equity, and inclusion and we recognize that building the relationships and work environments that foster a sense of belonging in every staff member is critical to achieving our racial equity goals.

ADDITIONAL RESOURCES

- **Website:** www.bridgespan.org
- **Selected articles:**
 - o "[Rethinking How Students Succeed](#)," by Lija Farnham, Gihani Fernando, Mike Perigo, & Colleen Brosman, with Paul Tough
 - o "[School District Innovation Zones: A New Wave of District-led Efforts to Improve Economic Mobility](#)," by Nithin Iyengar, Kate Lewis-LaMonica, Mike Perigo
 - o "[Collaborating Towards Kindergarten Readiness at Scale: A Funder Group Case Study](#)," by Katherine Kaufmann, Laura Brookhiser, Bradley Seeman
 - o "[How Field Catalysts Galvanize Social Change](#)," by Taz Hussein, Matt Plummer, Bill Breen
 - o "[Audacious Philanthropy](#)," by Susan Wolf Ditkoff and Abe Grindle

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AREAS OF EXPERTISE

'Standing Out' and 'Fitting In' at School

Culturally Sensitive Approaches to Motivation Research



BIO

DeLeon Gray is passionate about bringing cultural interpretations to achievement motivation research. He partners with teachers to understand how students' perceptions of their learning environments are linked with feelings of uncertainty about whether they "fit in" within the schools and classrooms in which they are enrolled. Education and behavioral science researchers regard fitting in (belonging) as a driving force behind students' achievement behaviors in school. DeLeon builds on this idea by showing that standing out (distinctiveness) at school is also helpful for producing adaptive scholastic outcomes. Importantly, teachers can embrace students' cultural distinctiveness in ways that affirm students and support their engagement in schools and classrooms.

WHY BELONGING MATTERS

In the United States, members of socially marginalized groups have historically been (and still are) forced to address the legitimacy of their presence in structurally White spaces, including schools. For this reason, there is no topic more central to the in-school experiences of students of color than considerations of who belongs and who does not.

FEATURED PROJECT

The goal of *iScholar* is to develop a coherent set of instructional practices with teachers. These practices target motivational needs specific to economically disadvantaged adolescents in predominantly Black and Latino middle schools. This project is distinctive in that our work will help teachers, STEM professionals, school administrators, district-level administrators, and caregivers to unpack the concept of achievement motivation—thereby equipping them with strategies essential for discussing and intervening in specific aspects of students' motivation.

ADDITIONAL RESOURCES

Gray, D. L., Hope, E., Matthews, J. S. (2018). Black and Belonging at School: A Case for Interpersonal, Instructional, and Institutional Opportunity Structures. *Educational Psychologist*, 53(2), 97-113. doi: 10.1080/00461520.2017.1421466



PERTS, the Project for Education Research That Scales, is a center at the Stanford University Department of Psychology. PERTS strives to catalyze a more science-based approach towards academic motivation and resilience in America's schools and colleges so that all students are given the opportunity to develop into avid and effective life-long learners.

OUR MISSION

PERTS helps educators apply insights from the psychological sciences in order to foster motivation, resilience, and success in America's schools and colleges.

WHAT WE DO

America's educators are rarely equipped to take a science-based approach towards student motivation and engagement. As a result, over 40% of U.S. middle and high school students report being disengaged in school. Furthermore, students from underserved groups are disproportionately likely to learn in environments that are motivationally stifling. Given that learning is nearly impossible in the absence of motivation, there is little doubt that America's learning outcomes could be far better and far more equitable if its educators were equipped to nurture students' natural drive to learn.

In order to catalyze a more science-based approach towards academic motivation and resilience in America's schools and colleges, PERTS engages in three mutually reinforcing activities:

- We translate insights from the psychological sciences into cost-effective recommendations that America's educators can rapidly adopt and institutionalize. For example, we have created and co-created evidence-based resources that have been accessed by hundreds of thousands of educators and deployed in hundreds — if not thousands — of educational institutions.
- We promote continuous discovery and improvement by deploying scalable evaluation systems that enable researchers and educators to test what strategies work best and where. For example, last year our analytics infrastructure enabled hundreds of educators to rapidly test the psychological impact of their practices within their local contexts. It also enables researchers to run large-scale field experiments that serve as proof-points for psychologically attuned practices.
- We drive the adoption of psychologically attuned practices by building intentional partnerships with schools, colleges, and other organizations that can influence the learning experiences of underserved students on a large scale. For example, we have partnered with Khan Academy, Class Dojo, Relay GSE, and Equal Opportunity Schools to spread evidence-based insights to hundreds of thousands of educators who collectively teach millions of students.

OUR CURRENT PRIORITIES

- **Propagate the use of existing, validated psychologically attuned strategies by America's schools and colleges.** For example, we are continuing to grow the network of colleges (already over 200 strong) that is deploying evidence-based programs, like *Social Belonging for College Students* and *Growth Mindset for College Students*, in order to foster student motivation, resilience, and success.
- **Develop and validate scalable professional learning programs that measurably build teachers' capacity to employ *empathic instruction*** — to effectively attend to the emotional and motivational factors that affect learning and to the ways in which instructional practices affect students' desire and ability to learn. For example, the *PERTS Engagement Project* (EP) is an adaptive professional learning program that helps teachers engage in iterative cycles of inquiry and action in order to create more motivating learning conditions for their students. It is being piloted this school year in middle schools and high schools throughout the nation through partnerships with Equal Opportunity Schools, Relay GSE, Transforming Education, New Teacher Center, and a number of individual schools.

OUR FOCUS ON BELONGING

We define belonging as the feeling that one is respected and valued in a given context. When students' sense of belonging is insecure, even minor academic setbacks can activate anxieties about whether others value and respect them, and these anxieties can block learning through multiple routes. For example, belonging anxiety makes it difficult to focus one's attention on learning, and it increases the perceived social risk of adaptive learning behaviors, like asking questions or getting help from an instructor.

To help educators foster a secure sense of belonging, PERTS:

- Provides evidence-based recommendations in the *Mindset Kit Belonging Course* (accessed ~50,000 times). See mindsetkit.org/belonging.
- Gives colleges free access and implementation support for the evidence-based program, *Social Belonging for College Students* (implemented by 64 colleges so far, reaching over 39,000 students). See perts.net/social-belonging.
- Equips educators with measures of the motivational climate and strategies for continuously improving their relationships with students through the *PERTS Engagement Project* (currently being piloted). See perts.net/engagement.

ADDITIONAL RESOURCES

PERTS.net/engagement

Kirp, D. (2016, August). Conquering the Freshman Fear of Failure. *The New York Times*.

Kirp, D. (2017, September). Don't Suspend Students. Empathize. *The New York Times*.

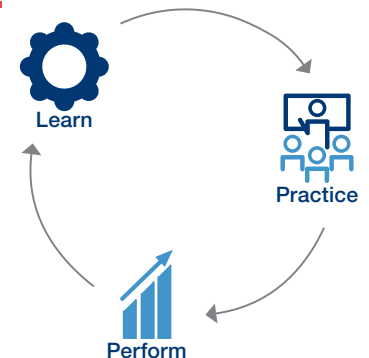


Relay is on a mission to teach teachers and school leaders to develop in **all students** the skills needed to succeed in college and life.

THE RELAY APPROACH: LEARN. PRACTICE. PERFORM.

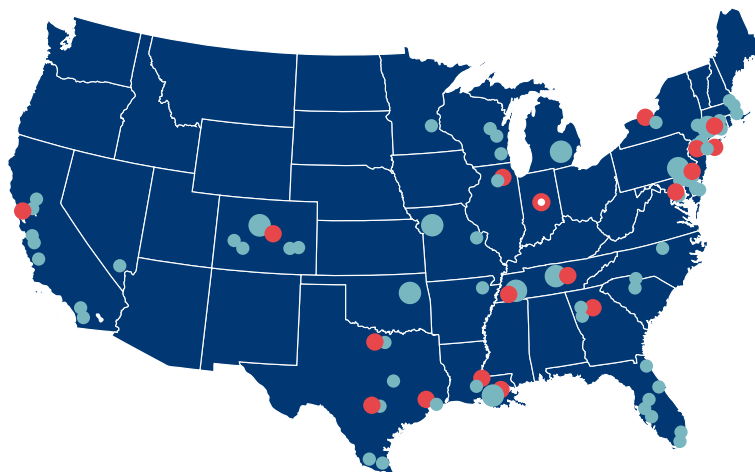
Just as doctors and athletes must train for years to become expert professionals, we know that it takes meticulous **practice**, focused **feedback**, and **frequent repetition** to become a skilled teacher or school leader.

The Relay approach combines **proven strategies** with hundreds of opportunities to apply learnings, receive expert coaching, and demonstrate proficiency in leading students to academic and character growth.



CAMPUSES

Relay currently operates 18 campuses and serves teachers, school and systems leaders in 25 U.S. states and the District of Columbia, reaching nearly 5,000 educators.



● Campus ● Future Campus ● Leadership Program Fellows

Atlanta
Baton Rouge
Chicago
Connecticut
Dallas-Fort Worth
Delaware
Denver
Houston
Memphis
Nashville
New Orleans
New York
Newark
Philadelphia & Camden
Rochester
San Antonio
San Francisco Bay Area
Washington, D.C.

OUR STORY

Relay is an accredited national nonprofit institution of higher education with a groundbreaking approach to teacher preparation. Since we first opened our doors, we have launched 18 new campuses, designed and delivered programs for undergraduates, teaching residents, and school leaders alike while expanding our impact with online learning tools and platforms.



PROGRAMS

ASPIRING TEACHERS

Relay Teaching Residency

A two-year program that offers aspiring teachers a salary, a job as a teacher-in-residence, mentorship from an experienced teacher, extra opportunities for deliberate practice, support earning teacher certification/licensure, and a master's degree.

Relay Summer Experience

An intensive, six-week summer teaching fellowship program. Summer Residents teach summer school to elementary school students while receiving ongoing Relay-aligned coaching and development.

CURRENT TEACHERS

Master of Arts in Teaching

A two-year degree program focused on practical skills that prepare candidates to effectively support PK–12 students in achieving academic and character growth (includes a recommendation for state certification/licensure for eligible teachers).

Alternate Route Certification/Licensure

A one-year program for brand new teachers and career changers seeking state certification/licensure (offered at select campuses).

Advanced Certificate in Special Education

A program that equips teachers with the skills and mindsets needed to lead a wide range of exceptional learners to achieve ambitious academic goals (offered at select campuses).

SCHOOL & SYSTEMS LEADERS

National Principals and Principal Supervisors Academy

A practical one-year program for current school leaders focused on high-leverage instructional leadership that includes differentiated tracks for principals and principal supervisors.

Leverage Leadership Institute

A selective fellowship opportunity for exceptional school and school system leaders to expand their impact and gain the

skills needed to train and support new and emerging leaders.

Instructional Leaders Professional Development (ILPD)

National

A program designed specifically to build the instructional leadership skills of assistant principals, teacher leaders, and instructional coaches. In order to attend this intensive, one-week program, team members must have principals and/or principal supervisors enrolled in the Principals Academy or Principal Supervisors Academy tracks.

Regional

Similar to the national program, this is a new year-long program designed to build the instructional leadership skills of school and school system leaders within a region/state. Program participants must commit to attending a week-long intensive and subsequent follow-up sessions throughout the year.



Branch Alliance for Educator Diversity (BranchED) is the only non-profit organization in the country dedicated to strengthening, growing, and amplifying the impact of educator preparation at Minority Serving Institutions, with the longer-range goals of both diversifying the teaching profession and intentionally addressing critical issues of educational equity for all students.

OUR MISSION

BranchED's mission is to maximize programming and drive innovation in preparing highly-effective educators who reflect and champion the diversity of our nation's schoolchildren.

WHAT WE DO

BranchED's vision is highly effective diverse educators for all learners. BranchED's work is premised on the notion that it is possible to bring about higher academic outcomes for all children by redefining what constitutes quality educator preparation through commitment to a collective vision that marries quality and diversity in reflection of the changing demographics in America. While minority serving institutions (MSIs) comprise only 13% of educator preparation providers (EPPs) in the United States, they educate over 48% of our nation's teachers of color and 19% of our school leaders of color. These changing demographics in America's classrooms require a systematic re-examination of educator preparation practices and consideration of the role of culture and identity in student learning. BranchED prompts the field to think about quality educator preparation from the unique perspective of faculty and candidates in our nation's MSIs.

OUR CURRENT PRIORITIES

Since its inception in September 2017, BranchED has worked with over 200 faculty from 70+ MSIs to help maximize their performance and foster collaboration with partners—including PK-12 districts, business communities, nonprofits, and philanthropies—to drive innovation in educator preparation programs.

Three goals comprise BranchED's mission:

- ❖ Empowering MSI EPPs to identify and build on existing assets for sustainable program improvement and growth



- ❖ Connecting MSI EPPs around a shared vision of quality
- ❖ Advancing the imperative for, and practice of, evidence-based continuous quality improvement among MSI EPPs and amplifying MSI EPP voice & contributions to the field

Through these goals, BranchED aims to activate and equip 150 MSIs in the next five years to maximize the quality of their educator preparation programs by providing training, technical assistance, and performance-based coaching support – coupled with peer learning, collaborative problem solving, and leadership activation.

OUR FOCUS ON BELONGING

BranchED's take on belonging focuses on the inclusive practices of teacher educators – and by extension teacher preparation programs – as models for the mindsets, orientation, and practices that pre-service educators should learn and emulate once in practice. By creating equitable experiences for all learners, including academic and social supports within and outside of the classroom, educators can embrace the multiple identities of learners, create a sense of connectedness and acceptance, and inspire the joy that comes from being in safe and secure relationships with others. We believe that this ushers learners toward the realization of their full potential. In sum, for us, belonging is about identity and social emotional well-being, as well as climate and context – with the educator being the primary lever of influence. We think that this can be learned and that teacher educators (university faculty, clinical supervisors, and cooperating teachers) have the responsibility to model and explicitly teach these strategies as a part of high-quality educator preparation programs.

ADDITIONAL RESOURCES

BranchED recently launched the *Quality Framework*, which articulates the six design principles essential for the quality preparation of all educators. For additional information, please visit our website at www.educatordiversity.org.

CONTACT US

BranchED been named one of the [10 Big Ideas in Education](#) by Education Week. With your partnership we can do more to equip, unite, and activate these critically important programs, as well as collect and share their expertise with the field at-large.



To learn more, contact BranchED's President and CEO Dr. Cassandra Herring at drherring@educatordiversity.org.

sevenzo

OUR MISSION AND APPROACH

It is our vision that all students have access to caring, inclusive and impactful learning environments, because we know a **student's sense of belonging** and safety in the classroom is the gateway to engagement and learning.

As such, we're on a mission to mobilize educators and help them turn evidence of impactful practices into action. We do this by working with clients to translate scientific knowledge into practices teachers can try tomorrow, engage educators in peer learning communities to drive action, and capture key insights and impact stories that can further inform individual and collective action.

IMPACT = USABLE KNOWLEDGE + ENGAGED COMMUNITY + IMPLEMENTATION INSIGHTS

HOW WE WORK WITH CLIENTS

We advance our mission by working in partnership with research institutes, education organizations, and school systems to help educators learn what works and take action.

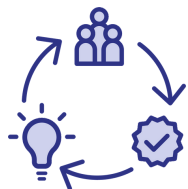


WE TRANSLATE SCIENTIFIC KNOWLEDGE

We translate evidence of what works into actionable, bite-sized practices that educators can try tomorrow.

- ✓ Translate scientific evidence into bite-sized, actionable practices
- ✓ Design and develop engaging classroom resources for educators
- ✓ Incorporate educator stories, feedback and insights into these resources
- ✓ Provide broader access to the resources to increase reach and impact

Past and current clients include Search Institute and PERTS at Stanford University, for whom we have created classroom toolkits, rooted in scientific knowledge of impactful practices, that include a mix of educator stories, self-reflection prompts, and classroom activities.



WE RUN EDUCATOR PROGRAMMING

We facilitate peer learning communities that generate energy for action, solve collective problems, and support educators with practice implementation.

- ✓ Design and facilitate impactful, action-oriented educator learning sprints
- ✓ Add programming capacity to organizations at a fraction of FT staff costs
- ✓ Incorporate high-quality resources into programming to support learning
- ✓ Increase engagement, satisfaction, and action in the educator community

For a second year, Education First is partnering with Sevenzo to engage educators from the "SEL in Action" community in a variety of programming experiences. Participants are able to connect, learn, and exchange practices with others from across the country.



WE CAPTURE INSIGHTS ABOUT WHAT WORKS

We capture what "bright spots" are doing to create impact, and then help teachers, schools and districts strategize how to incorporate key implementation insights into their workflows.

- ✓ Study, learn from, and capture "bright spot" elements
- ✓ Design and deliver case studies or summaries
- ✓ Help educators and schools notice, glean insights and take action
- ✓ Publish and disseminate insights to inspire a broader network to take action

In partnership with Remake Learning, Sevenzo studied how Sto-Rox School District is implementing a teacher-led learning model. In addition to helping the district, the case study has since been shared with other districts as a model from which to learn.

COLLECTIVE IMPACT

In Bantu, Sevenzo means ***"the communal effort required to make change,"*** and this ethos guides our work everyday. Rather than work in isolation or duplicate efforts, Sevenzo works in partnership with clients to achieve our mission by increasing our collective impact. Educator action is accelerated by our ability to aggregate communities and cross-pollinate scientific knowledge and high-quality resources across these communities.



To discuss how we might partner together, please contact
Masa Uzicanin, Executive Director and Founder, at masa@sevenzo.org.

Learn more at sevenzo.org.