Interventions designed to foster a sense of belonging, identity affirmation, and growth mindset improve long-term discipline outcomes for negatively stereotyped boys

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Millions of students are suspended each year in the United States.[1] Yet research has shown that removing students from classrooms for even short periods of time can have lasting, adverse effects on their educational and life outcomes.[2] Additionally, there are persistent inequalities in how students are disciplined, with black and Latino boys much more likely than their white peers to receive suspensions that keep them out of school, even when they engage in the same behaviors as other students.[3,4,5]

A recent paper by Parker Goyer, Gregory Walton, Geoffrey Cohen, Jason Okonofua, and their colleagues explores this pattern. The authors hypothesized that high rates of discipline citations for students of color are the product of a toxic social-relational cycle between students and teachers. At the heart of this cycle are harmful stereotypes that allege that black and Latino boys are "troublemakers." That stereotype can lead teachers to perceive and respond to students more harshly.[6] And for students, apprehension about that stereotype can create a worry about whether they will be perceived and treated fairly in school, which can change what students expect of and how they respond to teachers.

If discipline problems arise from a toxic relationship cycle, can those relationships be improved? And would that reduce disciplinary citations? In theory, both teachers and students are avenues into improving this relationship. Prior research by Okonofua, Paunesku, and Walton focused on teachers' mindsets about misbehavior in the classroom and found that could mitigate suspension rates.[7] The present research examined students' agency in this process.

The research team designed two experiments focused on bolstering students' sense of belonging and ability to grow and improve and tested whether this could forestall negative cycles of interaction between teachers and students and improve the unfolding of students' experience in school over time.

KEY FINDINGS

- Two brief classroom interventions delivered in middle school, one focused on beliefs about belonging, values affirmation, and growth mindset, and another focused exclusively on belonging, reduced discipline citations among negatively stereotyped boys by 57% over 7th and 8th grades and by 65% over seven years, from 6th through 12th grade, respectively.

- Participating in the belonging intervention reduced feelings of belonging uncertainty and stereotype threat and increased feelings of social belonging among black boys over three years in middle school.

- To improve disciplinary outcomes over time, the interventions seemed to interrupt negative patterns of interaction between students and classroom teachers: In Experiment 1, they reduced the risk that one citation led to another in 7th and 8th grades; and, in Experiment 2, they prevented a rise within 6th and 7th grades in "subjective" citations—citations that depend on the judgment of the teacher—which may both reflect and fuel a deteriorating relationship.

THE DEVELOPMENT OF RECURSIVE CYCLES

Extensive research has highlighted pervasive negative stereotypes about black boys' likelihood and severity of misbehavior in school,[8] with more limited evidence about similar stereotypes for Latino boys.[9] These stereotypes may influence how teachers respond to students' behaviors and how they expect students to behave in the future, especially in subjective situations where teachers exercise judgment regarding whether an infraction occurred and, if so, its severity.

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A student bumping into a desk, for example, could be interpreted by a teacher as an accident or an act of aggression. A student's attempt to explain his behavior may be perceived by the teacher as "defiance" or "disrespect," a subjective disciplinary infraction. This ambiguity allows for misinterpretation from both the teacher and the student. Past research has found that racial inequities are substantially larger for judgement-based, subjective infractions than they are for clearly-defined, objective infractions.[10] Similarly, when faced with repeated misbehavior from a student, even just a second minor infraction, teachers are more likely to perceive a problematic pattern and discipline the student more severely when the student belongs to a negatively stereotyped group.[11]

Students are also aware of these stereotypes and the risk that they could be perceived unfairly in school. If teachers respond harshly to a student's own minor or ambiguous misbehavior, it may only confirm in their minds the unfairness and illegitimacy of teachers' disciplinary decisions, deepening mistrust. In this way, initial discipline citations can set off a self-perpetuating cycle of vigilance and perceived or actual disrespect between black and Latino boys and their teachers.[12] These negative perceptions can amplify over time as each party acts and reacts to the other. This snowballing system of interactions is defined by the research team as a "recursive" – or ongoing and self-reinforcing – cycle. Even though this cycle is confined to a single teacher or set of teachers in a given school year, students' experience with and perceptions of teachers can influence their interactions with other teachers in future grades.

Previous research has shown that these cycles can be interrupted by interventions that focus on changing middle school teachers' mindsets[13] and practice.[14] The current study explores the role of students' perceptions in these cycles.

Type of Citation	Type of Citation	Example
Objective	Clearly defined actions that are not up to interpretation	Tardiness; Vandalism
Subjective	Require teachers to exercise judgment regarding both whether an infraction occurred and, if so, its severity	Defiance; Disruption

Table 1. As defined in this study, discipline citations are the number of officially-recorded citations during each school year for which students received a consequence, as determined by classroom teachers or other school staff. The table above outlines the two different types of citations discussed in the study.

Experiment 1: Combined Social Belonging, Growth Mindset, and Values Affirmation Intervention in 7th Grade

Can interventions to support students reduce disciplinary citations in middle school?

In the first experiment, the researchers tested whether social psychological interventions to help support students' sense

of belonging and ability to grow could reduce disciplinary citations at two middle schools. In these schools, located in the Western United States, approximately 40% of students received free or reduced-price lunch and the student body was approximately 41% Latinx, 36% white, 14% Asian American, 5% black, 2% Native American or Alaskan Native, 1% Native Hawaiian or other Pacific Islander, and 1% identified with two or more races.[15]

At the start of 7th grade, students were randomly assigned to one of three conditions. Each condition involved six 15- to 25-minute class sessions (three per semester): (1) a control condition (n = 246) in which students were provided neutral activities during all six sessions; (2) a combined condition (n = 248) in which students were provided exercises for growth mindset, social belonging, and values affirmation in two sessions each, or six interventions sessions in total; and (3) a growth-mindset-only condition (n = 248) in which students were provided the growth-mindset intervention in two sessions and neutral activities in the other four sessions. Table 2 describes the treatment and control activities.

Essentially, each intervention was designed to challenge a narrow representation of the self that can arise for students, especially when they face negative stereotypes and stigma in school. The interventions invited students to see themselves as adequate and capable people with enduring values who can connect, grow, and belong, rather than seeing themselves, for example, as a token of a group who might not belong in school or who may never improve academically.

Both the combined intervention and growth-mindset intervention reduced discipline citations for negatively stereotyped boys.

Boys from negatively stereotyped groups (i.e., black, Latinx, Native American or Alaskan Native, Native Hawaiian or other Pacific Islander, and those who identified with two or more races) who were assigned to the combined intervention received an average of 0.52 citations per year during 7th and 8th grade while their peers in the control group received an average of 1.20 citations. In other words, there was a 57% reduction in disciplinary citations over two years.

Negatively stereotyped boys who were assigned to the growth-mindset-only intervention showed a similar reduction in citations, receiving an average of 0.36 citations.

Girls of all racial and ethnic groups and nonstereotyped boys had low levels of citations in the control condition and showed no change as a result of either treatment.

The combined intervention significantly reduced the likelihood that boys who had previously received a subjective citation received another

What about recursive cycles? A total of 40 boys from negatively stereotyped groups received a first subjective citation in 7th grade. Did the intervention mitigate a negative cycle in which an initial subjective citation led to another?

It did. The combined intervention reduced the probability that these students received an additional subjective citation in 7th grade by 50%. During 8th grade, this effect extended to encompass both subjective and objective citations. The combined intervention reduced the probability these students

Table 2 The table below provides an overview of the activities that students completed in Experiment 1.

	Treatment Activity	Control Activity*
Growth Mindset	These sessions used examples from neuroscience and other students, along with guided writing prompts, to convey that intelligence can grow with effort, effective strategies, and help from others.	These sessions involved learning about how scientists study the brain and the functions of its four lobes.
Social Belonging	In these sessions, students read brief stories about how older students initially worried about fitting in at middle school and interacting with teachers and how these concerns often dissipated with time, thus representing these worries as normal and often improving with time.	These sessions conveyed that most students initially have little interest in state government but come to care more about it as they spend more time in middle school.
Values Affirmation	In these sessions, students completed writing exercises in which they reflected on their own core values and wrote about why those values were important to them.	These sessions involved reflecting on how values not important to the self might beimportant to others.

* Control session activities were matched in length and interactivity to the treatment exercises.

received any citation in 8th grade by 69% (from 78% to 24%). The growth-mindset-only treatment had similar effects, but they were smaller in magnitude and not statistically significant.

These results suggest that in-class exercises designed to bolster students' sense of belonging, affirm their values, and promote a growth mindset disrupted recursive cycles of discipline for boys who face increased likelihood of being stereotyped in these contexts.

EXPERIMENT 2: SOCIAL-BELONGING INTERVENTION IN 6TH GRADE

A seven-year analysis of the effects of a social-belonging intervention on discipline citations

The second experiment tested the social-belonging intervention alone, which most directly addresses students' beliefs about their developing relationships with teachers. The team explored how this intervention affected students' discipline citations over a seven-year period, from 6th to 12th grade.

The sample included 25 black boys, 43 black girls, 39 white boys, and 30 white girls, for a total of 137 students who attended a middle school in the Northeast United States. Compared with the schools in the first experiment, this school had more white teachers, fewer students receiving free and reduced-price lunch, and more discipline citations overall.

In the beginning of 6th grade, students were randomly assigned to either participate in the social-belonging exercise or a control activity. The researchers collected data on participants' objective and subjective discipline citations over the following seven years.

Students also reported on their psychological experience throughout middle school, at the beginning and end of each school year. The key measures included students' feelings of (1) belonging uncertainty, how much they agreed with statements like "When something bad happens I feel like maybe I don't belong at [school name];" (2) stereotype threat, how much they agreed with statements like "Sometimes, in school, people draw negative conclusions about my race's intellectual ability;" and (3) social belonging, how much they agreed with statements like "I feel like I belong in my school."

The social-belonging intervention reduced discipline citations for black boys

Black boys who were assigned to the social-belonging intervention received an average of 1.02 citations per year through 12th grade, while their peers in the control group received an average of 2.86 citations per year: a 65% reduction in citations. There were no effects among black girls or white students.

A large initial reduction of citations in 6th grade drove the decrease of citations over time

In 6th grade, black boys who received the social-belonging intervention received an average of .70 citations while their peers in the control group received an average of 3.18 citations. The data suggest that this large initial decrease in the treatment group persisted over time, rather than students experiencing incremental decreases in citations each year. This pattern aligns with the theory of recursive cycles, in which initial negative student-teacher encounters snowball into more and more negative beliefs and behaviors over time. This was not true among male students.

The social-belonging intervention interrupted the cyclical pattern of increased subjective citations for black boys within each school year

How did two class sessions early in 6th grade reduce discipline citations for black boys over seven years? To begin to understand this question, the research team examined the over-time trajectory of subjective and objective citations early

in middle school. In the control condition, black boys began 6th grade with few subjective citations in the fall semester as they began the year with new classroom teachers—but they rose sharply over the year. In 7th grade, the same pattern happened. Black boys began the year with few subjective citations but these rose over the year.

By contrast, black boys who received the belonging treatment started each year low in subjective citations—and they stayed low over the year. It was as if the intervention changed how students responded to teachers in a way that prevented a negative cycle from emerging, one where students were increasingly penalized by teachers for behaviors that require the subjective judgment of teachers. Those subjective citations may both reflect and fuel a deteriorating relationship.

The number of objective citations, meanwhile, did not rise over the course of the school year, suggesting that black boys in the control group did not experience a general decline in self-control or respond to other seasonal effects.

After two years of this pattern, control-condition black boys began 8th grade with relatively high levels of subjective citations even in the fall semester, while black boys assigned to the intervention maintained similarly low levels of subjective citations as in 6th and 7th grades. Control-condition black boys continued to have higher discipline citations than belonging-condition black boys through 12th grade.

This treatment effect was not present among black girls or white students.

IMPLICATIONS OF THIS RESEARCH

These experiments provide evidence for the theory of recursive cycles and show how it manifests in relationships. Interactions between students and teachers feed on mutual awareness of stereotypes, and these recurring interactions can result in disproportionately high levels of discipline citations for boys of color.

The interventions in this study gave students a narrative with which to understand interactions with new classroom teachers. In turn, over time, the interventions gave students greater confidence in their belonging in school.

Yet even as the interventions aimed only to alter students' perceptions and beliefs (teachers were unaware of students' condition assignment) their effects reached beyond students' minds and behavior to alter dynamic patterns of interaction between students and teachers and, thus, students' experience of school.

Importantly, while this study provides insight into the role of students' beliefs in recursive cycles, it does not indicate that student-facing interventions should replace other efforts to address inequities in school discipline, such as teacher-focused approaches, structural and school climate

improvements, and relevant legislation. It does suggest, however, that all efforts to address disproportionate discipline issues in schools should bear in mind critical relationships between teachers and students and how stereotypes and recursive psychological processes can harm these relationships.

Additionally, while these interventions were tested in two rather different middle school contexts, it is not known to what extent these results would generalize to other students, schools, and developmental stages. Of note, future research should examine the role of stereotyping and belonging concerns in disproportionate discipline rates among girls of color since the intervention did not benefit them in these particular school contexts where their discipline citation rates were relatively low.

Overall, the study takes an important step forward in understanding the role of stereotypes, and how those stereotypes show up in students' and teachers' beliefs and expectations, in the context of school discipline.

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