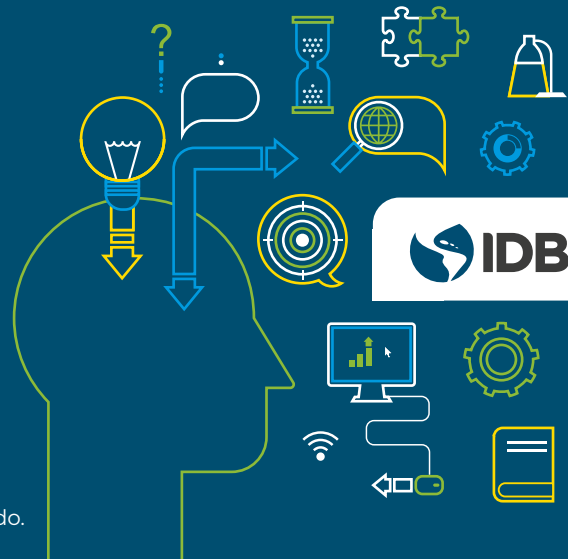


RESEARCH INSIGHTS

Can After-School Programs, as a Source of Socio-Emotional Learning, Help to Improve Adolescents' Behaviors and Academic Outcomes?

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After-school programs (ASP) with psychology-based curricula improved students' behavior at school by 23 percentage points compared to extracurricular-only programs in violent neighborhoods of El Salvador, Guatemala, and Honduras.



The impact on improved behavior was largest for the highest-risk students.



Programs with a mindfulness curriculum were more effective than those focused on character development, reducing dropout and improving fluid intelligence.



CONTEXT

Children living in gang-controlled areas of Latin America are at high risk of being exposed to or engaging in violent activities. These outcomes can affect adolescents' well-being and economic opportunities, including worsening labor market outcomes or increasing involvement in crime. For at-risk individuals, their inability to regulate their emotions can increase the likelihood that they will respond violently to some stimuli.

Key Concept

FLUID INTELLIGENCE

The capacity to think logically, identify patterns, and solve novel problems independent of acquired knowledge.



PROJECT

Our study, involving 897 students from 21 public schools in El Salvador, Honduras, and Guatemala, assessed the impact of socio-emotional learning (SEL) in After School Programs (ASPs). Schools were randomly divided into three groups: i) *Clubs*, ASP with extracurricular activities only, like sports and arts; ii) *Virtue*, adding a character development curriculum; and iii) *Mindful*, adding a mindfulness curriculum. Students attended 1.5-hour after-school programs twice weekly for seven months in 2019. The study measured impacts on behavior, dropout, academics, and potential mediators like social-emotional skills, fluid intelligence, and emotion regulation using teacher reports, records, and task-based assessments.



RESULTS

We find that, compared to students in *Clubs*, participants in the psychology-based interventions (*Virtue* and *Mindful*) are 23 percentage points (pp) more likely to be well-behaved at school. This improvement is equivalent to an increase of 36% relative to the share of students in *Clubs* with an above-the-median behavior score.

We next analyze the differential impacts of the SEL component on behavior at school for different student characteristics using a machine learning approach. Our results indicate that the most at-risk students are benefiting the most from the ASP's SEL component. That is, the net effect of this ASP component is larger for students with greater exposure to risks (those living in high-homicide urban municipalities or engaging in worse behavior at school at baseline), students likely to have less adult supervision, students whose demographic characteristics are positively correlated with violent behaviors (male and older students), and students who have lower fluid intelligence and higher alertness or stress at baseline.

Key Concept

SOCIAL-EMOTIONAL SKILLS



Abilities like perseverance, self-control, and risk averse behavior that allow individuals to manage emotions, behaviors, and social interactions, and build healthy relationships.

We further disentangle these results and find evidence of emotion regulation as a mechanism driving the effects of the SEL component on behavior at school. Our results show that students who participated in the variant of the ASP that included psychology-based interventions reduced their emotional-reaction score by 0.24 standard deviations relative to students assigned to the variant that includes only a protection component. This reduction suggests that participants became emotionally and behaviorally calmer and less impulsive.

Our last result is that the type of curriculum for the SEL component matters. While both SEL curricula are effective in behavioral enhancement, the *Mindful* approach offers additional advantages in reducing dropout rates and enhancing youth resilience and focus, making it a particularly compelling option in educational settings.



POLICY IMPLICATIONS

This study indicates that incorporating psychology-based curricula focused on building social-emotional skills like emotion regulation into after-school programs can significantly improve students' behavior at school, social-emotional skills, and emotion regulation.

Policymakers have to keep in mind that the type of psychology-based curriculum matters. On average, the *Virtue* curriculum affects student behavior, risk-taking, and emotion regulation. Meanwhile, the *Mindful* curriculum improves behavior at school, decreases school dropout, and increases fluid intelligence after negative stimuli. Therefore, we conclude that *Mindfulness* is more effective in improving students' outcomes.

We show that these programs can be implemented in a cost-effective manner. These programs are relatively cheap: the average cost per student of the respective ASPs is US\$296.5 (US\$269.4 for *Clubs*, US\$292.5 for *Mindful*, and US\$327.6 for *Virtue*), which is only one-seventh the cost of similar programs for at-risk youth in the United States. Remarkably, our back-of-the-envelope calculation shows a benefit-cost ratio that ranges from 11.3 to 45.2. Hence, from a public policy perspective, this program is worth investing in because it is likely to pay for itself in the short run and can even generate large additional welfare gains in the long run.



Overall, these results have promising implications for public policy discussions regarding interventions designed to reduce violence within schools and, indirectly, to improve academic achievement. This evidence is relevant to educational systems in Latin American and the Caribbean, which in general lack the necessary resources to provide quality education, but can potentially offer low-cost after school programs at the school.

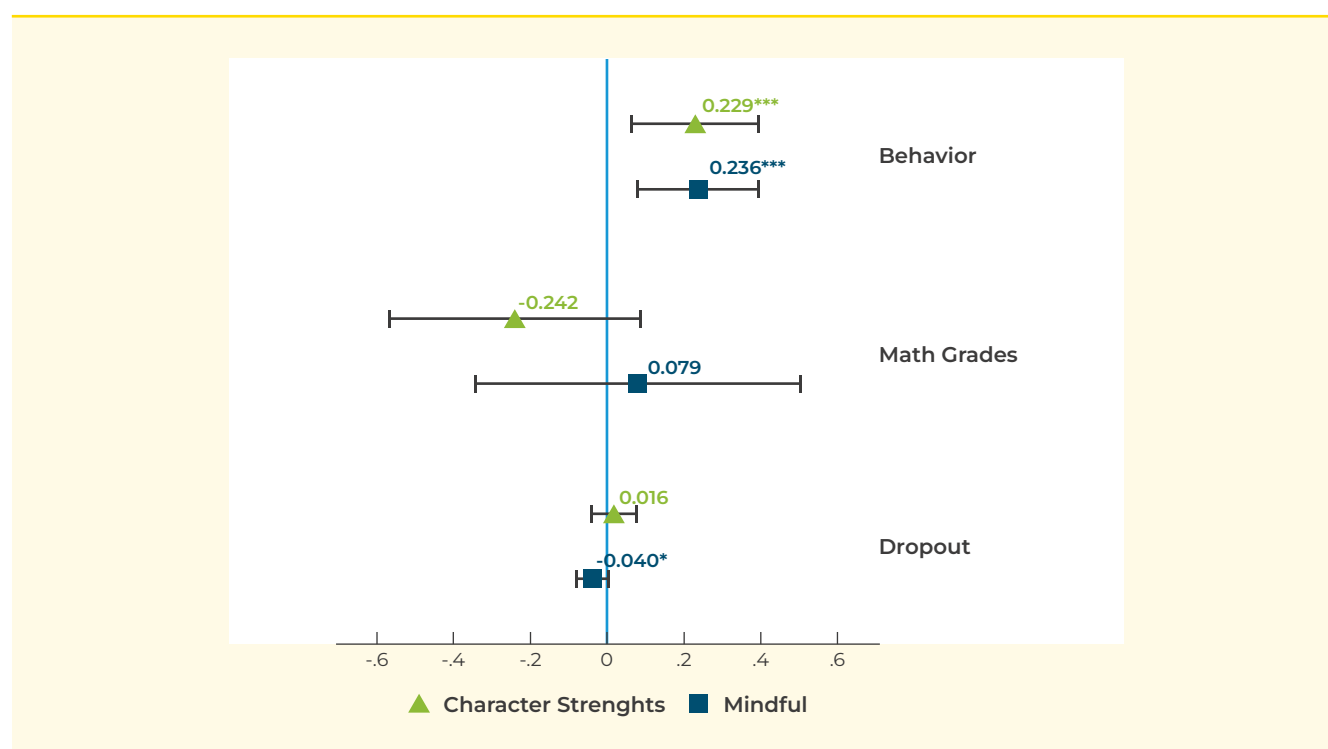
Key Concept

AFTER SCHOOL PROGRAMS (ASPS)



These are interventions implemented in school facilities after the school day that usually include activities related to learning and extracurricular activities (sports, the arts, leadership, etc.).

FIGURE 1. Overall Effects of After-school Programs with Psychology-based Curricula



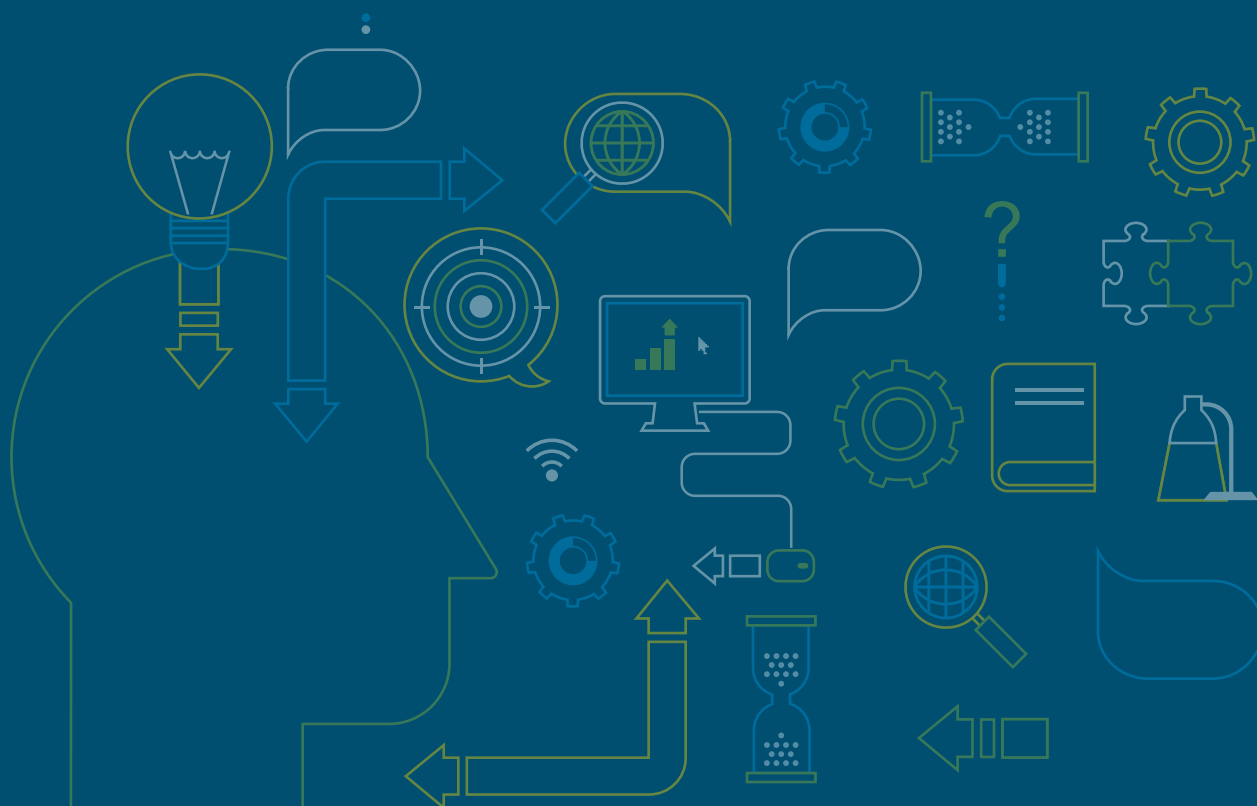
Note: Triangle and square markers show the estimated treatment effects in percentage points for each type of psychology based curricula. For example, a value of 0.229*** for Behavior under *Character Strengths* means that, on average, students assigned to the *Character Strengths* curricula are 22.9 percentage point more prone to exhibit positive behavior with respect to *Clubs*, the control group. The asterisks denote statistical significance levels: *** (p < 0.001), ** (p < 0.01), and * (p < 0.05). Confidence intervals at the 95% level.

FULL STUDY

Dinarte, Lelys, Pablo Egaña Del Sol, Claudia Martínez, and Cindy Rojas Alvarado. 2024. "When Emotion Regulation Matters: The Efficacy of Socio-Emotional Learning to Address School-Based Violence in Central America." IDB Working Paper No. 1585. Washington, DC: Inter-American Development Bank. <https://doi.org/10.18235/0012854>.

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