Social-Emotional Learning Programs for Adolescents

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Summary

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Adolescence is a period of tremendous learning, exploration, and opportunity. Yet it's also a time when behavioral and health problems can emerge or worsen, with negative consequences that last long into adulthood. For instance, people who are victimized or bullied during adolescence can later become more aggressive and more depressed.[1] Extreme school-discipline policies can push young people toward delinquency as adolescents and toward criminal behavior as young adults, even if they weren't inclined to be delinquent before (a phenomenon called the school-to-prison pipeline).[2] And failing to complete high school on time predicts lower health, wealth, and happiness over the lifespan, even for people who later earn a GED.[3]

Social and emotional learning (SEL) programs for adolescents are appealing in part because they may prevent such problems. SEL programs try to help adolescents cope with their difficulties more successfully by improving *skills* and *mindsets*, and they try to create respectful school environments that young people want to be a part of by changing the school's *climate*.

Adolescents may especially need this kind of social and emotional help. Just when academic work becomes more difficult and friendships become less stable, the brain's method of processing emotions undergoes a dramatic transformation.[4] The onset of puberty—which marks the beginning of adolescence—causes changes in brain structure and hormone activity that can make even minor social difficulties like peer rejection extremely painful and hard to deal with.[5] Those biological changes also create a more intense thrill from risky

behavior, especially when it may win peers' admiration.[6] Last, adolescents expect more autonomy and independence in personal choices like whom to be friends with.[7] In sum, adolescents are learning how to handle new demands in school and social life while learning to deal with new, intense emotions (both positive and negative), and increasingly feeling like they should do so without adult guidance. SEL programs are one way to help them navigate these difficulties.

But do SEL programs work for adolescents? If so, how well and under what conditions? And how can they be improved? This article reviews these questions. Here are the main takeaways. First, effective universal social-emotional learning can transform young people's lives for the better. Effective programs can prevent catastrophic outcomes, such as unwanted pregnancy, arrests for violent crime, or dropping out of high school. They can also encourage greater thriving, including having less stress, better health, and a greater love of learning.[8] Improving adolescents' interior social and emotional lives can spill over into other areas of functioning, because social and emotional life matters so much at this age. Given that the same programs can sometimes affect many different outcomes, effective universal SEL can be economically efficient.[9]

Second, and less encouragingly, typical SEL programs, which directly teach adolescents skills and invite them to rehearse those skills over the course of many classroom lessons, have a very poor track record with middle adolescents—roughly age 14 to 17—even though they work with children. Programs for adolescents are sometimes simply aged-up versions of childhood programs— for instance, they communicate the same message, but now the character doing

the talking has a skateboard and a chain wallet. Such programs often fail to capture adolescents' attention, both in what they say and how they say it. The evidence is clear: we can't rely on an elementary-level, classroom-based, social-skill-training program revamped for middle adolescents. The story is less clear for early adolescents, roughly age 10 to 14. Before eighth grade, adolescents sometimes benefit from direct-instruction programs. However, even these younger adolescents may benefit more from programs that are more "adult-like"—indeed, early adolescence may be an excellent time for wiser social-emotional programming.

Third, effective programs make adolescents feel respected by adults and peers and offer them the chance to gain status and admiration in the eyes of people whose opinions they value. Ineffective programs do this less well or focus on factors that matter less, such as knowledge of risks, planning, or goal setting. This means that new programs might use different tactics: they might aim to make the good and healthy choice also feel like the "awesome" choice.

Background

Early and Middle Adolescence

Adolescence begins at puberty and ends with independence from adults. In this article, I call *childhood* the elementary years before fifth grade, *early adolescence* roughly fifth to seventh grade, and *middle adolescence* roughly eighth to 12th grade. I say "roughly" because these labels are imprecise. Adolescents begin puberty at very different times. Girls mature earlier than boys, and even within genders it's normal for people to begin puberty two to three years apart. Moreover, different racial and ethnic groups in the United States tend to

start puberty at different times. For instance, it is normal for African American girls to begin puberty at age 7 or 8; white and Asian American girls often begin several years later.[10] Until more SEL program evaluators measure indicators of pubertal status, such as secondary sex characteristics or levels of the hormones testosterone or estradiol, it will be hard to separate biological maturation from chronological age and school year when trying to understand why programs show different effects at different ages.

Contrary to popular stereotypes, testosterone isn't an aggression hormone, and it isn't purely a sexual-desire hormone. It's also a status-relevant hormone.

What Changes during Adolescence?

The onset of puberty means that adolescents pay more attention to social cues that signal possible threats to status or respect, and they exhibit greater reactivity to feedback about status or respect (thrill of pride or admiration, fear of humiliation or shame, or anger at unfairness). They also experience increased motivation to engage in social learning situations relevant to status and respect (those that create acceptance).[11]

Hormones

Pubertal maturation leads to increases or changes in the functioning of a number of hormones, including testosterone, estradiol, cortisol, oxytocin, and dehydroepiandrosterone (DHEA-S).[12] All

of these hormones are related to social and emotional functioning, but so far, testosterone has shown the clearest link to what SEL programs might typically do right or wrong.

In both males and females, pubertal maturation leads to a surge in the production of testosterone. Contrary to popular stereotypes, testosterone isn't an aggression hormone, and it isn't purely a sexual-desire hormone. It's also a status-relevant hormone. When people's testosterone levels are high, they're more likely to focus their attention on markers of status and to respond powerfully when their status is on the line.[13] For example, one study found that testosterone predicts aggressive behavior when boys have deviant friends but leadership when they don't—demonstrating how it focuses attention on the criteria for status.[14]

Psychological Needs

Along with biological changes, adolescents experience psychosocial changes. Bradford Brown, a developmental psychologist at the University of Wisconsin, wrote in a report for the National Academy of Sciences that adolescents have four developmental tasks:[15]

1. To stand out: to develop an identity and pursue autonomy;

2. To fit in: to find comfortable affiliations and gain acceptance from peers;

3. To measure up: to develop competence and find ways to achieve, and

4. To take hold: to make commitments to particular goals, activities and beliefs.

When SEL programs honor adolescents' desire to achieve these tasks—that is, when they respect the kind of person an adolescent needs and wants to be—they can capture adolescents' motivation to change. When programs threaten that desire, instead, they may not change behavior.

Skills, Climate, and Mindsets

Different people sometimes mean very different things when they talk about SEL programs. One perspective is that the child needs to be changed—that the child's skills need to be supplemented or revised in some way, and the program will teach the child to do that. This is the skills model. Another perspective is that the environment needs to be changed—that the teachers and other grown-ups in the school need to change the emotional climate to be less negative and more supportive. This is the climate model. Research offers evidence for and against both. One perspective sits between the two: the mindsets model. Environments can socialize children and adolescents to hold different belief systems, or mindsets.[16] These mindsets in turn cause them to use (or not use) the skills that they have or are acquiring.

In general, the skills model of SEL seems less effective with adolescents than it is with younger children. The climate model can be powerful, but it doesn't always translate into positive behavior when children leave the affected climate (for example, when they're out of school and on their own, or after the program ends). The mindsets model is promising for producing internalized, lasting change, because it's a mental model that stays with people over time. The evidence I present below suggests that the ideal is to create a supportive

emotional climate that also teaches young people mindsets they can apply when they eventually leave that climate.

Grounding Examples from Diverse Domains

Let's consider concrete examples of the difficulties and potential inherent in adolescent SEL programs. The examples come from very different areas: teen pregnancy, youth violence, teen smoking, and medical adherence.

Teen Pregnancy

Many programs to prevent teen pregnancy tell youth that adults don't condone or allow teenage sex. Abstinence-only training is one such example; others are programs that teach skills for refusing sex. In meta-analyses (studies that aggregate the results of many individual experiments to make overall statements), these skill-based programs have often shown no reductions in teen pregnancy.[17]

But Teen Outreach, a volunteer service program for ninth to 12th graders, led to significant reductions in teen pregnancy.[18] Although less than 15 percent of its content involved discussions of sex—and in many schools, the content on skills for safe sex was not even delivered—Teen Outreach reduced the rate of pregnancy (for girls) or responsibility for pregnancy (boys) from 9.8 percent to 4.2 percent. It also had impressive side effects; it improved academic behavior, reducing suspensions from 29 percent to 13 percent and course failure rates from 47 percent to 27 percent. These kinds of benefits have appeared in numerous evaluations. Some recent replications found weaker benefits, but there were problems with those studies; for

instance, in the replications the researchers gave aspects of the treatment to the control group, and so the two groups didn't differ at follow-up.[19]

Although Teen Outreach taught skills, skills training wasn't its core. High school students participating in the program did about 35 hours of community service over one year, thus working to make their communities better. Simultaneously, in their health classes they received training in areas like self-confidence and social skills that could help them serve the community more effectively. The program didn't imply that "you need skills because there is something wrong with you." Instead, it began with the assumption that young people want to matter—they want to do something of consequence for the world around them, and they want to have a coherent life story. Adolescents were willing to learn social skills as long as doing so served the broader purpose of mattering. Presenting skills training in this way can avoid the disrespectful implication that adolescents need such training because of a deficiency.

Youth Violence

The Quantum Opportunity Program was a four-year after-school program that taught low-income high school students about the importance of staying out of trouble with the law.[20] It also taught youth about long-term the risks of unhealthy substance-use and sexual behaviors, paired them with adult mentors to coach them in life skills, and gave them financial incentives for attending the sessions and carrying out healthier behaviors. It seemed to involve everything needed to keep young people on track. But 10 years after the program

ended, male participants were more, rather than less, likely to have been arrested.[21]

Contrast this to Becoming a Man (BAM), a weekly school-based discussion group that produced dramatic effects.[22] BAM reduced arrests among participants by 28 to 35 percent and violent crime by 45 to 50 percent, and increased high school graduation by 12 to 19 percent at long-term follow-up. BAM doesn't ask young men to suppress their desire to fight or retaliate when they are disrespected on the street. BAM doesn't tell young people what they have to do, or what's right or wrong; it even acknowledges that sometimes it is important to retaliate to protect one's reputation. But the program helps young men find other ways to save face and maintain their status when confronted with a threat. It gives them a new mindset for interpreting threats, and it helps them develop different ways to be masculine, such as focusing on integrity and personal accountability. BAM features open-ended, student-led discussions with mentors from the neighborhood, along with a series of activities that build relationships and a sense of community with others in a small group. It also involves an appealing act of defiance: students have to skip class to attend. Paradoxically, skipping class to attend BAM led to higher graduation rates. Overall, BAM is a respectful way of reducing youth violence in Chicago.

Smoking

An enormous amount of research in public health has sought ways to reduce teen smoking via programs that teach social or emotional skills. Such programs have (1) emphasized the long-term consequences of smoking, (2) directly taught refusal skills, or (3) tried to change the whole

school's culture through advertisements, promotions, assemblies, and more. Yet a large, randomized evaluation of a program that used this skills model found few if any benefits among 12- to 15-year-olds—a finding matched by many other similar studies.[23]

Paradoxically, skipping class to attend BAM led to higher graduation rates.

But SEL programs can include messages that harness adolescents' deepest motives—their desire to attain respect and status in the eyes of peers or adults whose opinions they value. In the early 2000s, one antismoking campaign did this—the well-known truth® campaign.[24] This campaign didn't emphasize the long-term health consequences of smoking, nor that adults believe teens shouldn't smoke. Instead, it depicted rebellious, autonomous adolescents flooding the streets, screaming into megaphones at rich, old tobacco executives in high-rise buildings in Manhattan, telling them to "take a day off" from tricking and harming children for the sake of profit. In rigorous policy evaluations, this campaign was effective at changing smoking behavior; one evaluation estimated that in its first four years, it kept 450,000 adolescents from starting to smoke.[2]

Adherence to Cancer Treatment

Adolescents often reject SEL programs that aim to improve their mental health. But with surprising frequency, they also reject unpleasant or inconvenient behaviors that could improve their physical health. In a hospital, doctors and nurses can force adolescents to complete treatment.

Yet after they leave the hospital, about half of adolescent cancer patients choose not to complete regimens of painful self-administered drugs, such as oral chemotherapy.[26] (Younger children, by contrast, are much less likely to rebel against their chemotherapy regimen.[27]) A tried-and-true method from the skills model of SEL programs—explaining to adolescents the life-or-death consequences of their choices—hasn't changed such patients' behavior.

The mindsets method offers an alternative. One program sought to change the meaning of adherence to chemotherapy, from something that was seen as compliant and under adult control to something that was seen as rebellious and autonomous. In the video game *Re-Mission*, adolescents control a robot that drives inside the body of a cancer patient and destroys cancer cells.[28] In the game, participants ensure that the human cancer patient their robot inhabits practices positive self-care, such as taking chemotherapy and antibiotics. Compliance is framed as a way to rebel against the unwanted attacks of cancer cells, rather than listening to adults' warnings about long-term health. In a randomized evaluation with about 370 cancer patients, adolescents who played *Re-Mission* were more likely to choose to take their chemotherapy pills and also reported greater self-efficacy in doing so.[29]

Summary

What do these effective programs I've described have in common? They're not based on the skills model, even though they sometimes teach skills. Instead, they find ways to motivate young people in terms of the values that matter most to them, and they try to change how young people see the world—their mindsets. Effective programs

align the adult-sanctioned healthy choice—not getting pregnant, not getting arrested, etc.—with peer-sanctioned sources of status and respect like freedom, autonomy, or mattering. These programs do this both in how they talk to young people—by offering opportunities for authentic choice and input—and in what they teach—by helping young people envision a desirable future as the kind of person who makes healthy choices.

Disappointing Effects of Skill-Building SEL Programs

Are the ineffective programs I describe above isolated examples? Unfortunately, no. After a recent review of SEL programs, Nobel laureate James Heckman and Tim Kautz at the University of Chicago concluded, "Programs that target adolescents have not been established to be as effective as programs that target earlier ages."[30] Similarly, in a recent review for policymakers, adolescence expert Lawrence Steinberg wrote that "classroom-based health education is an uphill battle against evolution and endocrinology, and it is not a fight we are likely to win."[31]

What kinds of findings lead to such conclusions? One helpful method is meta-analysis, which can prevent any individual study from exerting too much influence. One of the most prominent meta-analyses of SEL programs reviewed 213 school-based, universal social and emotional programs delivered from Kindergarten to 12th grade.[32] It found that older adolescents altered their social-emotional skills substantially less than younger children did.

Or consider universal prevention programs for obesity. These programs typically teach a variety of thinking skills and new

habits for coping with temptation, while emphasizing the desirability of long-term health. A prominent meta-analysis of 64 programs found that they were effective for children younger than 11 but not for adolescents.[33] In fact, 12- to 15-year-olds who received an anti-obesity program gained more weight than those who didn't.

Similarly, the average effect of universal depression-prevention programs for high school students was found to be nonsignificant.[34] Similarly, a meta-analysis of 28 studies involving 19,301 young people ages 12 to 16 found that programs to reduce recidivism among juvenile delinquents had no significant overall benefits.[35]

A more informative test would compare the same programs across different age groups in the same evaluation study. One evaluation of the effects of school-based mentoring did this.[36] A total of 516 predominately Latino students in elementary, middle, and high school were randomly assigned to receive a mentor who met with them at schools an average of eight times. The authors found that although the mentoring program benefited boys' psychosocial outcomes (empathy, cooperation, and connection to teachers) in elementary school, mentoring led to harmful effects for high school boys.

A recent meta-analysis of 72 program effects that I conducted looked at how anti-bullying programs' efficacy changed when delivered at different ages.[37] From kindergarten to seventh grade, anti-bullying programs were beneficial, on average. But when the same programs were delivered in eighth grade or above, the average effect fell to zero. In fact, the estimated effect of the average anti-bullying program in high school was a small increase in bullying.

Traditional programs often work less well with adolescents, and eighth grade may mark a turning point in their efficacy. When evaluating a program, I recommend looking for whether it works specifically with middle adolescents (eight grade and above). Unfortunately, many program evaluations simply report the effect for middle school (sixth to eighth grade), overall. This means that school districts may sometimes scale programs for their older youth, when in fact the evaluation-effect size was buoyed by a benefit for sixth graders.

Adolescents might find it condescending to be given information they already have. For example, most teens already know that smoking is harmful.

Caveats

In this discussion, I don't mean to say that traditional programs have never worked with older adolescents, or that they can't work in the future. I'm simply saying that, on average, they haven't yet worked reliably.

A few other cautions are in order. For one thing, many studies' outcome measures have relied on participants' self-reporting. These studies would be more compelling if direct measurements of behavior showed the same results. Still, studies that measured behavior generally showed the same discouraging results. Also, many studies didn't compare the same program

delivered at different ages—only the anti-bullying and mentoring studies did. Therefore, the age trends I've discussed aren't definitive.

Last, these studies don't consider the possibility of sleeper effects, that is, beneficial effects that show up later, in early adulthood. Indeed, one prominent SEL intervention study found just such effects.[38] That's why researchers like Heckman have called for more studies that follow adolescents as they grow older.[39]

Troubleshooting Failed Interventions

Why might programs be less effective for middle adolescents than for elementary-age children? Four explanations are plausible.

First, it's tempting to think that typical programs aren't long or comprehensive enough. If adolescents are novices in the skills they're being taught in SEL programs, then perhaps the more they practice those skills, the more expertise they'll acquire. However, data offer little support for this claim. In fact, two meta-analyses (of obesity and depression prevention programs) by Eric Stice and his colleagues at the Oregon Research Institute found that shorter programs had stronger effects.[40] Likewise, one group of researchers found no effects for a long and comprehensive training program to prevent teen smoking, but much stronger effects after the researchers reduced its length by two-thirds.[41] One reason for these results may be that adolescents feel stigmatized by long programs that teach them what seem like basic social skills. They might also find it condescending to be given information they already have; for example, most teens already know that smoking is harmful.[42]

Second, it's also possible to think that social-emotional skills are no longer malleable by adolescence. But although early childhood does provide a "sensitive period" for some brain and stress-response systems, neuroscientists now agree that adolescence is a second window of opportunity for development, especially in the social and emotional domain.[43]

For example, Edith Chen and Gregory Miller, psychologists who specialize in how biology contributes to health, have found that childhood poverty is often a better predictor of later health problems than adolescent poverty, which could seemingly imply that the damage is done after a certain age.[44] Yet in the same studies, among adolescents who developed strong, supportive ties to family or who developed mindsets in which they didn't see the world as threatening, childhood poverty didn't predict poor outcomes.[45] Adolescents have the ability to form new social relationships or adopt new mindsets that buffer against stress, and effective SEL programs can help provide those things.[46]

Third, it's plausible that even if social-emotional skills are malleable during adolescence, typical programs could be targeting the wrong skills. Maybe traditional programs are simply targeting skills that are less relevant to the effects they seek to produce—on grades, school dropout, stress and coping, and depression, etc.—than they are in early childhood.

Take the case of anti-bullying interventions. The underlying theory for many anti-aggression programs is that students are aggressive because they lack social or emotional skills. However, summaries of many past studies show this is true primarily for younger children. Among middle

adolescents, peer aggression is predicted by social and emotional strengths, such as increased perspective taking, greater social influence, or high popularity.[47] Harming others' reputations through rumors or exclusion, which is what high school students often do, takes a certain amount of social savvy, while punching people—what young children do—does not.

Fourth, SEL programs may target meaningful, malleable skills but do so in ways that teens don't internalize—that is, they may not show a willingness to implement the skill or mindset in a different setting when they don't have to. Indeed, the neural and hormonal changes at the onset of puberty suggest that when the thrill of social success and the agony of public humiliation feel overwhelming, adolescents may be on the alert for quickly shifting attention and motivation.[48] Traditional methods of behavior change may sometimes force adolescents to choose between uncertain physical harm in the future (dying of lung cancer) and the feeling of certain social death in the present (humiliation before one's peers). More effective methods can frame a behavior in a way that lets adolescents opt for both future health and the immediate feeling of social respect, as Teen Outreach, BAM, truth®, and *Re-Mission* do.

For instance, adolescents in one recent study who watched video clips of their mothers telling them how they should change their behavior (for example, by cleaning their room, taking their shoes downstairs, or being nice to their siblings) showed a pattern of neural activity that suggested they weren't processing the criticism or planning to alter their behavior.[49] Specifically, in response to maternal criticism, regions of the brain relevant to anger were activated while

regions relevant to processing information and making plans showed blunted activation.

Yet not all adult-provided experiences elicit strong negative responses from adolescents. Recall the example of the *Re-Mission* video game, which increased adherence to a regimen of unpleasant cancer drugs. When researchers used functional magnetic resonance imaging (fMRI) to scan adolescents' brains while they played *Re-Mission*, the researchers found that game play activated neural circuits associated with intrinsic reward.[50] Adolescents felt pleasure when they were able to make their own choices and discover for themselves the consequences of their actions. Such neural circuits are known to be highly active, especially during adolescence, and they create a strong intrinsic motivation to learn and internalize an SEL message if it offers choice and exploration.[51]

In general, when SEL programs feel to adolescents like a mother telling them how to make their personal choices, null effects shouldn't surprise us. But when SEL programs offer adolescents a route to feelings of status and respect, it's likely that they'll internalized acquired skills and apply them in the real world.

Climate and Mindset Approaches

Next, I review several studies that used the climate and mindset approaches to improve adolescent SEL outcomes. They illustrate ways to create climates that are more respectful, or mindsets in which adolescents perceive that healthy choices confer status or that peer conflicts are less disrespectful. They take three approaches:

1. Creating a mindset that harnesses the adolescent desire for status and respect.

2. Creating a climate that's more respectful toward adolescents.

3. Creating a mindset that blunts the power of threats to peer status and respect.

The cases I discuss target different domains: academic achievement, healthy eating, school discipline, and aggression in response to peer victimization. Since these cases represent relatively new approaches, the interventions are more limited in scope and the data are sometimes from short-term demonstrations of efficacy, rather than from longer-term follow-ups.

In addition, this review of effective programs isn't exhaustive. Instead, I've chosen examples that do four things: show initial promise; illustrate a different component of the theoretical model proposed here; include early evidence of mechanisms that are in line with the proposed theory; and may therefore serve as a guide for the development of more robust programs.

Harnessing the Desire for Status and Respect

A few interventions have taught mindsets that harness adolescents' values by aligning healthy, long-term, self-oriented behaviors with the shorter-term desire to have or display status and value. Such interventions offer adolescents a purpose larger than their own self-interest to adopt a positive behavior.

This approach can be surprisingly effective. Adolescents are often characterized as selfish and concerned with short-term gains. So it can feel surprising to learn that they're also highly motivated to contribute to some part of the world beyond the self—to matter.[52] In the brain, adolescents appear

to derive so-called *eudemonic* (as opposed to *hedonic*) rewards from contributing to the world beyond the self.[53] This phenomenon is captured by adolescents' precocious attraction to social movements and their attention to hypocrisy.[54] And at a neurobiological level, there's evidence that testosterone—a key pubertal hormone—can heighten attention to unfairness, a first step toward social action.[55]

Purpose for learning. Recall that Teen Outreach increased academic achievement and prevented teen pregnancy by helping adolescents find meaningful roles serving the community. Analogously, some research has more precisely tested a "purpose for learning," defined as a motive for learning in school that both benefits the self in the long term and could have a positive effect on some component of the world beyond the self.[56] In correlational research, my colleagues and I found that adolescents who say they're learning in school so that they can make a positive difference in the world—but not adolescents who say that they're pursuing an interesting and enjoyable life—showed greater grit (perseverance toward long-term goals) and self-control, greater behavioral persistence on a tedious task, and greater persistence in college many months later.[57]

Can an intervention increase a purpose for learning? Yes. Our purpose-for-learning intervention asked adolescents to reflect on social issues that mattered most to them or the people they care about.[58] Next, it presented data and stories showing that many students like them desire to learn so that they can make a difference—not only so that they can achieve self-oriented ends. Last, the adolescents were asked to write to future students to persuade them to adopt a purpose for learning; in doing so,

they persuaded themselves to adopt such a purpose, as well.[59]

Rather than encouraging adolescents to suppress their desire to feel autonomous or to garner respect of their peers, SEL programs can give them a mindset that harness their developmental motivations.

In an initial study conducted with more than 400 ninth-graders at one high school, one-time exposure to the intervention in the spring semester improved grade point averages for all students at the end of the semester by approximately .10 grade points. For students who had previously earned low grades, the benefit was twice as large.[60] These effects were replicated in another study conducted with more than 1,500 students in a number of high schools across the country.[61]

Purpose for healthy eating. Inspired in part by the truth® campaign, Christopher Bryan, a social psychologist at the University of Chicago, developed a behavioral intervention for middle school students that taught "a purpose for healthy eating."[62] Its intention was to align healthy choices with adolescent values, so as to create an immediate feeling of status and respect. Like truth®, the program sought to redefine what it meant to be a healthy eater so that it had greater social-status appeal, implying that healthy eaters are independent-minded people who make the world a better place.

The intervention took the form of an exposé of industry practices, using real journalistic accounts to describe how food companies pay scientists to make junk food addictive to children's brains; how companies hired former tobacco executives to use cartoons to market food to children; and how food executives themselves will not eat the junk food or let their children eat it, making them hypocrites.[63] Viewed from this perspective, being the kind of person who stands up to these executives through healthy eating enhances respect—it's autonomous and prosocial, it allows one to join a social movement, and it affords the chance to demonstrate mastery.

A double-blind, randomized behavioral experiment evaluated the intervention—a 30-minute reading and writing exercise with a similar format to the purpose-for-learning intervention—with more than 450 eighth-grade students. The key behavioral outcome came the next day. The principal announced that the entire eighth-grade class would get a "snack pack," and students received a menu that had healthy food choices (fruit, nuts, and water) and unhealthy choices (cheese puffs, cookies, and soda). The researchers found that completing the exercise led students to choose junk food significantly less often. Crucially, the treatment was effective because it changed adolescents' perspectives on healthy eating, making them say that they respected healthy eaters more than unhealthy eaters.These two examples illustrate that rather than encouraging adolescents to suppress their desire to feel autonomous or to garner respect of their peers, SEL programs can give them a mindset that harnesses their developmental motivations.

What about peer influence? The examples above don't include studies that have tried to harness adolescents' desire to impress their peers and use it to support positive behavioral intervention. Conformity to peer norms turns out to be a fickle tool.

For instance, Tom Valente, a behavioral scientist at the University of Southern California's Keck School of Medicine, assigned high school–aged adolescents to a substance abuse–prevention intervention. For half of the participants, the intervention included a social network component, allowing them to work on the content together and share it.[64] The social network acted as an accelerator: adolescents were less likely to use substances if no one in their group had used them before, but if even one person had done so, the whole group was more likely to start using. The substance-using peer seemed to inoculate the other group members against the program's messages.

Creating a More Respectful Climate

The truth® campaign and the "purpose" approaches made adolescents more aware of how adults were disrespecting them, and then channeled that awareness into positive behavior change. A second approach to working with adolescent sensitivities, however, is to reduce adolescents' experiences of being disrespected by changing the climate.

For example, consider a classic group-dynamics experiment that Kurt Lewin, a founder of social psychology, conducted in the 1930s.[65] In the Lewin experiment, a disrespectful group leader who maintained order with threats and insults created a group dynamic in which adolescent boys began fighting soon after they were left unsupervised. Yet a respectful group leader who built consensus and valued boys' autonomy and competence by using democratic processes created an internalized group norm through which adolescent boys refrained from aggressive behavior regardless of whether they were supervised.[66]

In more contemporary research, programs that implemented *restorative justice*—working collaboratively with young people to repair relationships and reputation after they've committed an offense—were among the only programs that reduced recidivism in the juvenile justice system.[67] Restorative justice may convey dignity and respect by honoring adolescents' competence, while building relationships that create a sense of belonging.

Training Teachers to Create Respectful Environments

More recently, Anne Gregory, a developmental psychologist at Rutgers University, used a comprehensive teacher training and mentoring program (My Teaching Partner–Secondary) to help 86 high school teachers (with more than 2,000 students among them) create an intellectually challenging but respectful classroom climate.[68] Students got more autonomy in choosing meaningful work, which helped teachers show that they cared by creating belonging. Crucially, the students were able to engage in higher-order thinking and reasoning, rather than tedious "seat work," thus showing that their competence was respected. My Teaching Partner–Secondary isn't a typical SEL program—it doesn't teach students self-control skills or how to manage their emotions. Instead, it trains teachers to create a climate that treats students with respect and takes them seriously.

Strikingly, Gregory's program had effects that skill-based SEL programs rarely produce. Students in treatment classes were less likely to be disciplined for breaking rules. Furthermore, there was a strong racial gap in discipline infractions in the control group that was statistically eliminated in the treatment group, even two years after the teacher training ended. This reduction in classroom discipline infractions for African-American students was strongest when teachers created academically demanding classrooms that respected students' intellectual competence as rated by third-party observers. That is, making school easier isn't what led students to respect the rules of the class; it was being challenged and treated as though they could develop competence.

Jason Okonofua, a professor of social psychology at the University of California, Berkeley, used an even more minimal intervention to achieve a similar result.[69] Okonofua created an online activity for middle school teachers they could complete on their own time, without guidance from researchers, that changed their beliefs about discipline. They were persuaded that discipline should be empathetic, not "zero tolerance" and lacking compassion for students' reasons for acting out. In an evaluation with more than 35 teachers and 1,200 students, Okonofua found that students in treatment classrooms reported fewer experiences of disrespect, and also received half as many suspensions, which fell from 9 percent of students to 4.5 percent. When students felt that the climate was more respectful, they behaved in ways that showed they could manage their frustrations and emotions.

These examples illustrate three important points. First, the Gregory study highlights the interplay between academic and social learning. Making the classroom more rigorous constituted highly effective SEL programming. Teachers didn't have to choose between rigor and emotions.

Second, many approaches to reducing school discipline are child-focused and come from the skills model of SEL. This is, of course, a reasonable model for children. In adolescence, however, young people act out against rules that they think are unfair. Students may note that discipline is being applied primarily to minorities, with too little lenience or compassion, feeding into the sense that the system is biased, unjust, and disrespectful.[70] Teaching them more self-control may have no benefit, but reducing unfairness may have a large effect.

Third, adolescents are often characterized as peer-focused, to the exclusion of adults. Yet authentic relationships with adults—achieved by honoring young people's desire to feel respected—can produce important changes in their disciplinary behavior.

Blunting Power of Peer Threats to Status and Respect

Sometimes it's not possible to align a positive behavior with how adolescents' react to adult authority or to change their relationships with adults. In such cases, a third approach may be useful: creating a mindset that blunts the effects of threats to status and respect. Although adolescents shouldn't be oblivious to social threats, it may be helpful to learn that life or death doesn't hang in the balance with each incident of embarrassment or peer disrespect.

One method to convey this is to change adolescents' mindsets about the malleability

of their personal qualities, which can promote resilience in the face of difficulty.[71]

Mindsets of Personality

In a number of past studies, Carol Dweck of Stanford University and I have found that when adolescents believe that people's socially relevant traits and labels are fixed and unchangeable—called an entity theory of personality—this belief strongly predicts their reactions to social difficulty.[72] And teaching the belief that traits and labels are malleable and have the potential to change—called an *incremental theory of personality*—alters their reactions to social conflicts.[73] Interventions based on an incremental theory of personality teach that people have the potential to change (although change may not be easy or certain). Therefore, you're not stuck being a loser if bad things happen, and your peers aren't stuck as evil tormenters. This message can change the meaning of social events. Rather than feeling that their permanent status is on the line with each social misstep, adolescents may feel that they have space to make a mistake.

New research shows that changing mindsets of personality can promote greater social-emotional resilience in the face of daily stresses. An incremental theory of personality led adolescents to report being less emotionally affected by peer exclusion, and it improved their cardiovascular responses and stress hormones (as measured by cortisol).[74] A daily diary and saliva-sampling study showed corresponding benefits for stress hormones up to a week later.[75]

Research has also found that an entity theory strongly predicts a desire to take revenge. Those who believed people couldn't be changed were more likely to say peers were "bad people" and to report hatred toward them, which fed into the expectation that one would feel better if the perpetrator suffered harm.[76]

In one study conducted by my colleagues and I, adolescents were taught an incremental theory, then tested to see whether it reduced behavioral aggression. Six classroom workshops were led by practitioners trained in the developmentally wise methods for lesson delivery I described earlier in the healthy eating example: autonomy-supportive language, opportunities for self-persuasion, and capitalizing on descriptive norms (stories from upper classmen who found the messages helpful).[77]

In an experiment conducted in ninth- and 10th-grade classrooms, the incremental theory intervention was compared to a traditional coping-skills intervention that taught the best available skills but didn't address adolescents' underlying mindsets. Although it focused on skills, the control-group workshop was also aligned with adolescent values, including social norms, autonomy-supportive practices, and self-persuasion. Both interventions were compared to a no-treatment group.

We evaluated the program at one-month follow-up by examining whether adolescents would respond aggressively to a peer (actually, an electronic confederate) who excluded them via the online Cyberball game.[78] Aggression was measured by allowing participants to allocate unpleasantly spicy hot sauce to a peer who (the participants believe) hates hot sauce, just excluded the participants in the online game, and would have to consume the entire sample.[79] Adolescents who received the traditional coping-skills intervention were

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Recommendations for Research, Policy, and Practice

1. Differentiate Recommendations by Age

When a meta-analysis of a behavior-change or skill-building program includes studies conducted with children from kindergarten to high school and reports an average positive effect, it can be tempting to conclude that the program is effective for all age groups. Yet, as we've seen, such a conclusion can be misleading—effects can be very different for different age groups.

2. Find Ways to Make Environments More Respectful

Programs that seek to directly train adolescents in skills or habits for coping with difficult situations have shown very weak evidence for efficacy. By contrast, some of the most effective SEL programs work indirectly by changing the classroom environment to make it more respectful. When adolescents experience a more respectful environment, their internal traits may change in a positive direction. Future research might look more carefully at how to alter the psychological environment.

3. Think Carefully About What We Measure

As school districts and states embrace SEL programs, they'll want to measure whether such programs are effective. Here are three things to consider.

First, students' skills may not always be the best thing to measure. Rather, it may be more informative to measure psychological climate or perceptions of climate. For instance, students may lack self-control not because they aren't capable of it, but because they've discerned that the instructional content of a class isn't worth deploying their self-control skills.

Second, even when social-emotional skills matter, it isn't clear that they are commonly taught by high school teachers in the short term. Even programs taught by professional SEL educators under the close supervision of program designers show weak effects on SEL skills in high school. It may be unrealistic to expect that everyday teachers should be held accountable for the SEL skill scores of their students.

Third, even if SEL skills can be taught, there are many problems with current SEL skills measures. Most of them are based on self-reporting. Self-reporting can be fine when only the students know the answer to a question, such as when they report feeling disrespected or that they don't belong. But it can be unreliable when students have to count behaviors, such as the number of times they showed self-control.

Sources: James J. Heckman and Tim Kautz, "Fostering and Measuring Skills: Interventions That Improve Character and Cognition," working paper no. 7750, National Bureau of Economic Research, Cambridge, MA, 2013; Laurence Steinberg, "How to Improve the Health of American Adolescents," *Perspectives on Psychological Science* 10 (2015): 711–15; Joseph P. Allen et al., "An Interaction-Based Approach to Enhancing Secondary School Instruction and Student Achievement," *Science* 333, no. 6045 (2011): 1034–37; Anne Gregory et al., "Closing the Racial Discipline Gap in Classrooms by Changing Teacher Practice," *School Psychology Review* (forthcoming); Jason A. Okonofua, David Paunesku, and Gregory M. Walton, "A Brief Intervention to Encourage Empathic Discipline Cuts Suspension Rates in Half among Adolescents," *Proceedings of the National Academy of Sciences of the United States of America* (forthcoming); Joseph A. Durlak et al., "The Impact of Enhancing Students' Social and Emotional Learning: A Meta-Analysis of School-Based Universal Interventions," *Child Development* 82 (2011): 405–32

no less aggressive than the no-treatment control group. But adolescents who were taught the incremental theory of personality showed 40 percent less aggressive retaliation than either of the other two groups.

It isn't possible to protect adolescents from all potential threats to status and respect. These examples show that it may be helpful to change the meaning of some of those threats by altering the mindsets that determine how adolescents interpret them.

Conclusions

Can adolescent SEL programs be successful? It depends on how we define them. If we define a successful program as

one that intentionally instructs adolescents in a given skill, leading them to use that skill in novel settings and thereby show greater wellbeing, then the evidence is discouraging. But if we broaden our definition to include programs that affect social-emotional outcomes by creating climates and mindsets that help adolescents cope more successfully with the challenges they encounter, then the evidence is not only encouraging but demands urgent action in schools across the country.[80]

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