

MAGAZINE | FEATURE

Battle of the Bandwidth

How we can help students regain lost brainpower

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very second, our brains process about eleven million bits of information. We have conscious control over about fifty or so of these bits. Let's call this

bandwidth.

It can also be thought of as available cognitive capacity. Bandwidth isn't an indication of how smart someone is but of how much brainpower a person has available to bring to a task—learning in a classroom, for example.

Now, imagine students entering a classroom with some of that bandwidth already taken up. How much is left for learning? Bandwidth can be lost to many things both positive and negative, from the excitement of getting an A on a paper to the nervousness before a first date. Most of these sources of bandwidth depletion are temporary and naturally wax and wane. But other damaging societal sources persist, and these continuing sources of bandwidth depletion may well be a hidden crisis point on our campuses. Preserving and restoring cognitive capacity lost to a sense of uncertainty—which might be related to an aspect of identity or a feeling of not belonging—is an often-overlooked aspect of our educational imperative. Yet it is one that is well within our power to effectively address.

Several years ago, I read a book called *Scarcity: The New Science of Having Less and How It Defines Our Lives*, in which the authors explain how scarcity steals cognitive capacity. The authors, behavioral economist Sendhil Mullainathan and psychologist Eldar Shafir, call this the “bandwidth tax” of poverty. When people are worried about money because they live in persistent economic insecurity, Mullainathan and Shafir contend, the part of their brains focused on their lack of money is not available for making good choices, caring for themselves and their families, or taking advantage of opportunities such as job training. In short, worrying about what is scarce in their lives takes up much of their mental bandwidth, hampering their efforts to better their situations.

I've worked in public higher education for twenty-five years, so when I read this, I naturally thought about the scarcity college students who grew up in poverty might be experiencing. I wondered whether this bandwidth tax could explain why, according to the Pell Institute for the Study of Opportunity in Higher Education, economically secure students are nearly four times more likely than low-income students to earn a college degree. Maybe economically secure students are more likely to earn their degrees because they show up to class with more available bandwidth than students who constantly have to worry about money.

Similar statistical results in graduation rates exist for students who are members of many minoritized identity groups, according to the National Center for Educational Statistics. Learning this led me to think about other kinds of scarcity that might be experienced—such as a lack of respect, acceptance, or belonging—by students of color or who identify as LGBTQ+ or who have a disability or who have experienced childhood trauma. Some students in these identity groups may question whether they belong in a class or at an institution, fear for their physical or psychological safety, feel like they have to hide parts of their true selves, or feel invisible. The parts of their brains focused on these uncertainties are not available for learning. Significant chunks of their mental bandwidth might be taken up with ongoing ruminations: “Will I be safe?” “Will I be loved?” “Will I be treated fairly?” “Can I be successful here?”

It is by turning down the volume on these questions, if not silencing them altogether, that as educators we can help students get their bandwidth back.

Today, as a longtime faculty person and an invited speaker on many campuses, I often talk with groups of students, helping them recognize when their bandwidth is depleted and giving them some ideas about how to help recover some of their lost cognitive capacity, such as taking a break to spend time with friends, re-energizing with a walk or a workout, joining an identity-based affinity group, and asking for help from their teachers or academic and social support services.

However, bandwidth reclamation is about more than just helping individual students cope. Educators must make concerted efforts to intentionally create learning and living environments in which all students can thrive. Though many of the sources of bandwidth depletion occur due to societal realities that are larger than any individual institution, we can take actions on our campuses—both in person and online—that can go a long way to help students recover the bandwidth they need for learning.

First, the need must be acknowledged. If you’re wondering whether students at your college or university are feeling the effects of bandwidth depletion, I can confidently say, “Yes, they are.” I have visited and talked with colleagues and students at more than a hundred colleges and universities in the United States and Canada over the past four years, and I have not found a single campus where individuals did not relate to this bandwidth-depletion

problem. These institutions are now committed to helping students recover the bandwidth needed to achieve academic success, but educators leading these efforts also realize that it's a daunting task.

A good starting place can be to look at disparities in outcomes such as course grades and retention and graduation rates at your institution. Do some students—students of color, low-income students, students who are neurodiverse or who have a physical or mental disability, and students from other marginalized groups—consistently struggle to succeed in many courses and to persist from one semester to the next? Once we identify the disparities, we can ask: What steals bandwidth from our students, and how can we help students recover most of their lost cognitive capacity?

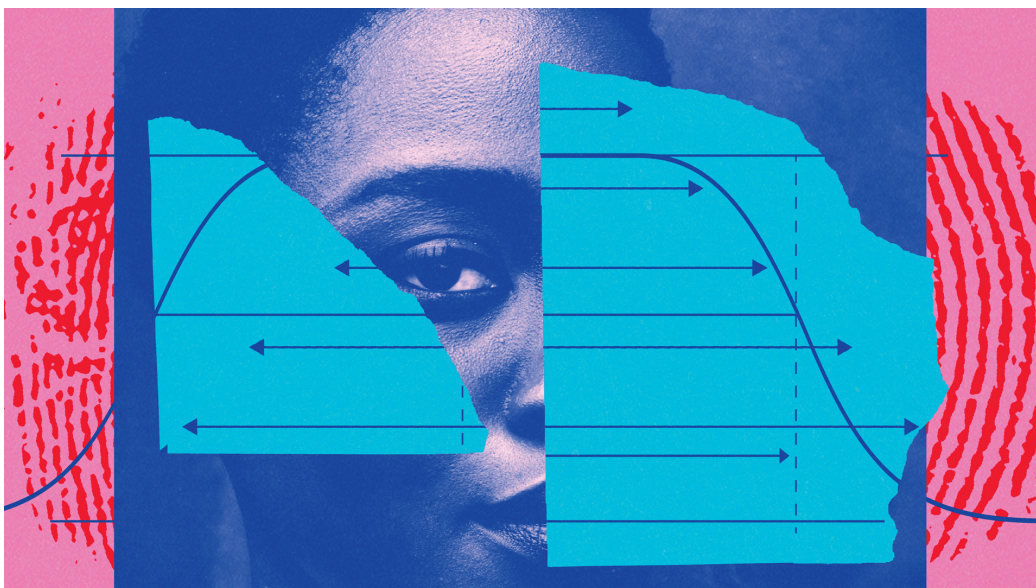
So what, specifically, are some of these bandwidth-robbers? In addition to the scarcity of money—an experience common to many students, especially those at community colleges—are phenomena I call social-psychological *underminers*. These include stereotype threat, microaggressions, belonging uncertainty, and the ongoing negative effects of childhood trauma.

Stereotype threat, identified by psychologists Claude Steele and Joshua Aronson in the mid-1990s, is something experienced by students who are members of groups about whom there are negative stereotypes. Steele later referred to stereotype threat as the “threat in the air” because it is a pervasive part of life. For instance, many girls are told at a young age that boys are better at math. It's not necessary for there to be someone in the room who holds this opinion for these girls to be affected—they carry this perceived bias around with them. For women who want to study math but have been told girls aren't good at it, worry (conscious or unconscious) about confirming their comparatively deficit abilities takes up bandwidth. The result can be lower performance on math exams or in interviews for math-related jobs, and the ingrained bad-at-math messages may ultimately lead these women away from STEM classes and careers.

Microaggressions can also steal bandwidth. First named in the 1970s by psychiatrist Chester Pierce, microaggressions are slights, insults, or invalidations experienced by people who have one or more marginalized identities. Microaggressions can be verbal or nonverbal and are often subtle. For example, a microaggression can occur when someone says to a Black

person, “You’re so articulate,” or when someone is pleasantly surprised by the competence of a young or elderly person. In all these cases, what comes across is the message of low expectations. Some microaggressions seem intended to be hurtful: when someone comments to an overweight person, “Do you really need that piece of cake?” Sometimes the slight is unintended: for instance, when I ask a person with an accent, “Where are you from?” and they feel like I’m suggesting they are not part of the group when I’m really just interested in them. But whether intentional or not, microaggressions can chip away at someone’s self-confidence. In fact, microaggressions can eat away at bandwidth precisely because students don’t always know the intent, sparking those roiling questions about acceptance, belonging, and safety.

Bandwidth loss also occurs when students feel the need to hide aspects of who they are because they fear they will not be fully accepted. These students might be experiencing what psychologists Gregory Walton and Geoffrey Cohen call belonging uncertainty. Perhaps it is their sexual orientation or gender identity, but what they are hiding might just as likely be about mental health, addiction, neurodiversity, an impoverished childhood, an incarcerated parent, or a chronic illness. Hiding any important aspect of identity or personal experience takes up lots of bandwidth: In addition to not feeling comfortable and accepted, students may worry about people finding out what they don’t want to share and anticipate negative consequences, such as rejection by friends or classmates or encountering hostility or discrimination.



When students have experienced childhood trauma, according to the Centers for Disease Control and Prevention, they often have compromised health and well-being as adults. Some of the sources of trauma include abuse or neglect, family conflict, parents or guardians with mental illness or addictions, domestic violence, death of a parent or sibling, homelessness, and natural or person-made disasters. Since most of the physical and mental conditions that result from childhood trauma are invisible—such as post-traumatic stress disorder and grief, as well as chronic illnesses associated with trauma like heart disease, depression, and anxiety—we can easily miss the signs and misattribute student behavior as a lack of commitment, laziness, or inability to do the required academic work. Making a bad situation worse, students may keep quiet about their trauma because they fear that their struggles will be held against them and that they won't get a fair assessment of their work and potential.

These four underminers are, fundamentally, about uncertainty. And uncertainty is the ultimate bandwidth stealer. Whatever its source, uncertainty turns up again and again in those ruminating questions: “Will I be safe?” “Will I be loved?” “Will I be treated fairly?” “Can I be successful here?”

The question for college educators then becomes, what can we do to maximize certainty so that those ruminating questions can be tempered or eliminated, at least while students are on our campuses and in our classrooms? Steele, in his 2010 book *Whistling Vivaldi: How Stereotypes Affect Us and What We Can Do*, writes about “identity safe” and “identity threat” environments. According to Steele, students can experience identity threat environments when the images around their campuses and on their institutions' websites do not reflect their identities. Or when they seldom see people who share their identities in teaching or leadership positions. While institutions are working on diversifying their faculty and leadership, that's a long-term process. What we can do immediately is to make sure public images—those in our student brochures, on our websites, and as part of campus art and signage—reflect the realities of our current student demographics, including a range of ethnicities, ages, and diverse physical appearances, ableness, and body sizes.

We can also learn to recognize how trauma manifests in student behavior in our classrooms. In her 2020 *Inside Higher Ed* article, “Leveraging the

Neuroscience of Now,” neuroscientist and *Liberal Education* advisory board member Mays Imad explains the effects of trauma on student learning. Trauma, Imad points out, causes students to revert to survival mode, so the everyday tasks of learning in a classroom may be relegated to second- or third-place priorities. I’m not suggesting that every student needs to reveal the history of their upbringing or share with their teacher or advisor or hall director other kinds of trauma they may have experienced or are currently experiencing. What I am saying is that students need to understand that if they did reveal these things, they would be safe, respected, unjudged, and supported. One thing I do to make sure students get this message is to intentionally build into my classes opportunities for students to share about their lives, which builds community and normalizes the idea that most of us have both positive and negative experiences that affect the person we are today.

The core work of bandwidth reclamation starts in the classroom. We can begin by following Imad’s suggestion to build community and trust among students so that we can ensure that our students feel “safe, empowered, and connected.” Students learn in relationship to other students, as well as to the teacher. Especially for critical and creative thinking, problem solving, and communicating across differences, interaction among peers is integral to growth and development and can be fostered through small-group discussions, collaborative projects, and frequent think-pair-share-style learning. When there is community—among all the students or in smaller groups in larger classes—students support each other. When students count on each other in a positive interdependence, we are freed up as teachers to focus on the course content.

For my part as the classroom leader, I never want my students to be victims of the “soft bigotry of low expectations” (a phrase used in a speech George W. Bush gave to the NAACP about the dangers of perpetuating low achievement expectations of disadvantaged groups). Though it may seem counterintuitive to encourage crafting a challenging class in light of bandwidth depletion, I strive to make my classroom a place of high expectations, coupled with the clear message that I am confident that my students can achieve those expectations. Equally important is high support: my message to students is “I’m with you every step of the way.” My syllabus notes requirements for academic work and participation, my availability for assistance, and academic support resources. I also break down major

assignments into manageable chunks, offering feedback at each step, and provide opportunities for redemption when first attempts don't succeed, like writing revisions, second chances on exams, and alternative ways to demonstrate learning such as oral exams or video presentations of a project.

But the call to reclaim bandwidth needs to be bigger than the classroom. Helping students feel safe and valued—and willing and able to ask for help and support when they need it—starts with making some fundamental changes in the way we approach campus life, both in person and online.

First and foremost, we must pay attention to the bandwidth depletion of everyone on campus, including all faculty and employees. Employees lose bandwidth due to the same social realities as students *and* from the exhaustion of caring about and supporting students. People whose bandwidth is depleted have less of it available to help students recover theirs.

We also need to involve everyone on campus in supporting student success. That includes security staff, librarians, food service workers, student workers, advisors, faculty, instructors, maintenance workers, counselors, administrators, coaches and athletics personnel, and office support staff. People in all employment sectors at institutions can contribute to student success from their spheres of influence, and many find great satisfaction in doing so.

And we need to encourage and reward this cognitive caregiving in tangible ways. Like many of you, I have received awards like “volunteer of the year” or other accolades that essentially say “really fine person who is always willing to help.” Those are nice and affirming, but what is more sustainable—and more honest—is to articulate the value of the work in tenure, promotion, and advancement processes. In my experience, the people who are most likely to be doing the day-to-day intense student support are women, especially women of color, and people who share a marginalized identity with students, such as immigrants, people of color, those who identify as LGBTQ+, those from low-income backgrounds, and those who were the first in their family to earn a college degree. If student success is truly a top priority, that work should be backed with resources and concrete incentives and rewards.

Ultimately, we can't eliminate all of the world's damaging social realities. We can, however, control what goes on in our classrooms, residence halls, student activity spaces, sports and recreation venues, and offices across campus. And we can ensure students receive affirming messages about belonging, identity safety, respect, visibility, acceptance, and support. These messages are critical. *All* students deserve the chance to benefit from the life-changing opportunities of higher education.

Illustrations by Mr.Nelson Design

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