conditions for motivated learning

Schools and teachers can be more intentional about encouraging student motivation.

By Kathleen Cushman

It’s sometimes easy to assume that students arrive in our classes wearing their motivation (or their apathy) like a backpack of school supplies. But when we listen closely to young people, we realize something different about what makes their eyes and minds light up.

Over the past several years, I have studied student motivation and mastery for the nonprofit What Kids Can Do (WKCD). I interviewed hundreds of diverse adolescents around the country about what made them ready and eager to take up a learning challenge. Their answers — distilled to a checklist of eight essential conditions — align closely to what the learning sciences tell us about motivation and mastery.

For example, value-expectancy research in cognitive psychology tells us that motivation rises when a person values a task and expects to succeed at it with reasonable effort (Center for Mental Health in Schools at UCLA, 2002). Those factors align with what young learners told me, and so we dubbed that principle “The Motivation Equation”:

\[ V \times E = M \]

(Value) \times (Expectancy) = Motivation

Neuroscience, too, backs up what students said about conditions that most help them learn. For example, studies show that when we reflect on work, our brains build a “case base” from past steps and their consequences — and those connections help us plan our next steps toward mastery.

As the young people below describe their experiences in school, they bring the research alive in the simple yet powerful list that we called their “Gr8 8” — conditions that make students want to engage with learning. Their stories and reflections remind us that listening closely to students can clarify the all-important work of every teacher: Draw students into challenge, and lead them to persist despite the obstacles.

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**Condition #1: We feel OK.**

“My day, once I stepped in, it just wasn’t right, you know?” said Steven, 15. “A lot of things were off . . . those things that pump you up and get you mad or get you down. Maybe people weren’t talking to me. And if you’re not OK, your academics are not gonna be so strong.”

Steven is right: The stresses that students experience, at school or outside of it, take biological priority in the brain over learning. Learning is very hard when elemental sensations — fear, shame, hunger, exhaustion, loss, even distraction — stand in the way.

Educators lay an essential foundation to motivation when they create an environment where children feel safe and cared for. School breakfast, for example, boosts the physical well-being of learners. But their emotional safety often depends on a classroom culture that focuses on inquiry rather knowing the right answer. At 17, Rashaun admitted “there are subjects that I’m not all that great at.” He counted on teachers to support his struggles. “They’ll work with me. They’ll understand and help me out.”

School structures that build bonds of respect among youth and adults also help students maintain their emotional balance. Jason, at 14, dreaded his bus ride home to a rough neighborhood. At school, however, his advisory group became his trusted cohort. “It’s somewhere safe where I can be,” he said. “It’s not a setting where you have to limit yourself. It’s like more of you can be open.”

**IN YOUR PRACTICE:**

What do students seem to worry about in school? What can you do to make them feel OK?

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**Condition #2: It matters.**

Like most of us, young people avoid engaging in work that doesn’t matter to them. Lighting the spark often requires just one aspect that they value. Amanda, who depended solely on New York City subways to get around, had no interest at first in a science class project on “fueling the car of tomorrow.” But a compelling introductory video made her realize that “mostly everything that you use uses oil, and we’re at some time gonna run out.” As she imagined how that would affect her own future, Amanda looked into the details. Before long — she recalled with delight — her father was “kind of in shock that I knew what I was talking about.”

Even when the subject doesn’t appeal, students are more willing to engage if it presents an intriguing puzzle or an issue of fairness. Also, the more choice they have in doing the work, the more value it has for them. Many are willing to try something simply because their teacher shows such zest for it. But if they see a task as fake or condescending, they turn away.

Above all, adolescents are seeking an identity that matters in their world. Kenneth, who dreamed of getting to “the theory behind things,” thought of math as “my way of being something and doing something and accomplishing something in life.” Steven spent five hours writing 100 lines of poetry for an “I Am” assignment in his English class. “This is what I want people to know about me,” he said.

**IN YOUR PRACTICE:**

What experiences have mattered most in your own learning? Does recollecting them remind you of anything these students say?
Condition #3: It’s active.

“It was the most difficult situation in the world,” said Michecarly, beaming as he described a geometry assignment in which he and his friends built a model house. “We helped each other with little details because we were each good at a certain part,” he said. “And it was just great.”

Tasks that are hands-on, collaborative, and fun can draw in even reluctant students. Moreover, when such active work brings them to grips with key concepts in a domain, it can leave an enduring impression. Maranda got her introduction to anthropology in 11th grade when her social studies teacher had students Skype with other 16-year-olds around the world. To underline the biases that different cultures acquire, the class also visited a dim sum restaurant. “We had chicken feet,” Maranda said with mingled fascination and horror. “That was one of the main things that really stuck out to people.”

Students often spoke with satisfaction of the knowledge they constructed through field expeditions, internships, experiments, and projects in video or other media. “I’m really learning about history other than inside a classroom,” said Amanda, who helped set up a treasure hunt of documents for visitors to her city’s historical society. “This is something I really wanna do and learn more about.”

IN YOUR PRACTICE:
Why did these activities capture students’ imaginations? How can you use this insight in your teaching?

Condition #4: It stretches us.

In elementary school, “I barely talked,” Griffin recalled. But starting in 6th grade, his teachers regularly challenged him with opportunities to develop the self-confidence he felt at age 14. Many other students also told of teachers who “just push you to your limits all the time,” as Arielle put it. “They see what you’re, like, able to be, and they just make it so much bigger.”

As in a fast-paced video game, students found excitement in tasks they regarded as “hard but doable.” Although they spoke of nerves and even fear, they also relied on teachers to edge them closer to their growth point. For example, Carla always had spoken Spanish at home, but, in her 10th-grade Spanish class, she could not read or write it well. In order not to disappoint herself and her family, she said, “I had to go back to those little-kid steps,” and she credited her teachers for insisting that she do so.

Neuroscientists have found that the satisfaction of grasping the higher skills they reach for builds learners’ desire to stretch further. “When I’m challenged the perfect amount, I just wanna keep repeating the process,” said Kenneth, an 11th grader. “I wanna make it something I’m great at.”

IN YOUR PRACTICE:
How can you ensure that students are challenged “the perfect amount”? Under what circumstances might pushing be counterproductive?

Condition #5: We have a coach.

No one achieves mastery without practice, but effective practice is an art and a science. Students said they felt most motivated by teachers who acted like coaches in the classroom: demonstrating new skills, providing support and encouragement, and helping them learn from their mistakes.

“He knows what limits you gotta work hard to [reach],” said Rashaun of the teacher who led his music class. “I sometimes get to a point when I’m just like, ‘I can’t push. That note’s too high.’ And he’s, like, ‘It’s well within your range . . . you gotta keep goin’ at it.’ He knows.” With a laugh, Rashaun conceded the eventual result. “I go through all the cracks in the voice until finally it comes through, and I get it.”

Based on a learner’s target, teacher/coaches like Rashaun’s provide specific information about what’s working and what isn’t. Rather than scoring or grading progress, they note what students can do and give pointers to move them ahead. For example, when Garlyn made a mistake while graphing the inverse of a quadratic in her 10th-grade math class, her teacher guided her to a new discovery about a deeper mathematical concept. “By getting half of it wrong, I got to learn something that we didn’t get to yet — which is pretty cool,” Garlyn said.

Just as sports coaches rely on scrimmages and games to reinforce learning, so teachers use quizzes and tests. “They go over the test, and we see everything that we got wrong,” explained 9th grader Wedjeena. “And he doesn’t give us the correct answers. We have to do it ourselves, what we did wrong, and he has examples and like stuff that will help us. I think that actually helps me because I get to see what I did wrong by myself, which I can improve, like later on. But when the teacher just says ‘This is wrong,’ or ‘This is how you do it,’ I don’t think that’s gonna help us.”

IN YOUR PRACTICE:
What mistakes are your students likely to make when they’re practicing a skill? What might your coaching and reinforcement ideally look like?
Condition #6: We have to use it.

As every teacher quickly finds out, even when we know something cold, teaching it to someone else is a different matter. Students also make that big step when they have to demonstrate or explain what they know to others. Whether that takes the form of presenting, performing, or teaching, using what they know provides a powerful social context in which students consolidate and clarify their own understanding.

Students can teach others in routine classroom activities, for example, by going over homework problems together. “The people who did get it can teach us who didn’t,” said Wilson, noting that his teacher stands by for extra help as well. Many students also said that working in small groups often helped them develop understanding together. “It’s a team effort,” said Sarah, describing a mock trial in her history class. “Everyone’s gotta pull their own weight. And if someone’s lagging behind, you’ve kinda gotta give ’em that extra push.”

Some teachers ask students to teach what they have learned to peers or younger schoolmates. Focus and attention reach a peak in such situations. The learner is no longer just receiving information but more importantly processing it through speech. Not only does the occasion carry an emotional charge (“I wanted to show off for my friends about the knowledge I had,” one student remembered), but students also have to organize and explain material to questioning outsiders. “I could catch my own mistakes because something that looks right on paper might not be correct when explaining,” a student reflected. Another said that teaching others made him “rethink everything I was taught.”

“When you bring things from school out into your everyday life — like using a vocabulary word in a conversation with a friend — that’s how you know that you’re really taking something on,” said Kyle, 15. He especially liked bringing friends and family up to date on what he learned about nutrition in his health class. “It’s not just information that I’m writing down to show my teacher,” he said. “It’s information that I take on with my life.”

IN YOUR PRACTICE:

When you teach, do you perceive an effect on your own overall learning experience? How could you ask students to demonstrate new knowledge?

Condition #7: We think back on it.

In the rush to move on, teachers may forget to provide students an opportunity to reflect on the work just concluded. What was difficult for them, and how did they manage those challenges? What would they do differently the next time? How did they grow? “It’s a big deal admitting when you can’t do something, like showing difficulty in a subject,” said Griffin, 14. “But that’s when the most growth happens and when your comfort zone gets expanded the most.”

“I used to look at myself in the mirror and not notice who I was,” said Luis, 16. “I didn’t know what qualities I had, what were my struggles, what was good, what was bad about me.” That changed because his school requires students to reflect and report on their progress three times yearly and to set their own goals for improvement. “Courage means to still keep it going even though it’s hard,” Luis concluded about his personal development. “And that’s what I’m basically known for here at my school. I take on challenges that not everyone will take.”

After making a mistake, Wilson, 16, hears his own voice in his head. “I say, ‘Wilson, don’t do this because it’s not the right thing to do. You can do other things better.’ I feel myself critiquing: ‘That wasn’t good. That wasn’t good.’ I know other people might be thinking the same, but they’re not telling me. And I would appreciate if they did tell me. But I have myself also.”

As learners reflect, their experiences start to make more sense. They begin to link new learning to what they knew beforehand and to reassess their own beliefs and opinions. They can place themselves within a community of others who have contributed to a particular field. They realize what they have accomplished and perhaps think of new ways to apply it. By narrating their own stories of continuing development, they’re also assessing themselves and their work.

“A lot of things surprise me,” admitted Amanda, a 12th grader. “I learn new things, and I also learn things about myself as I’m progressing.” Teachers praise Amanda as a hard worker, but she doesn’t quite believe them. It’s her own reflection that has brought her to terms with her possibilities. “I’m starting to learn,” she said, “that the best I can do is putting all the effort I can into it and making it the way I want it to be.”

IN YOUR PRACTICE:

What insights have you gained from thinking about new skills or knowledge you have acquired? What can you do to formalize reflection for your students?
**Condition #8: We plan our next steps.**

Students often acknowledge planning as one of their biggest challenges. “The most important thing to bring with you out of school is organization, which is something that I’m not really that good at,” said Max, 16. “If you forgot to do something at your job, you’re probably gonna get fired.”

Reflective discussion in general — including conversations about one’s personal goals — provides a critical base from which one learns to look ahead, imagine new possibilities, and plan accordingly.

“At first, I had lots of time,” said Amadeo, 15, thinking back on his 9th-grade year. “I just relaxed and did nothing and was lazy.” But as he set college in his sights, he realized he would need to balance important extracurricular activities with his other work. “I’m gonna start going to an elderly shelter to help out with my mom,” he said. “Prioritizing my time is the most important thing.”

Midway through 11th grade, Kenneth “wasn’t even attending school that much,” he confessed later. “I would go home. I wouldn’t do my homework. I’d be, like, ‘I’ll get by it. I’ll figure out a way to do it in school or something.’”

It took a conversation with an older friend to turn his thoughts toward what would come after high school and how he could plan for it. “You’ll go to college, and you’ll become somebody,” he recalled the friend telling him. “You just need to follow what you’re passionate about.” By the end of that year, Kenneth had adopted a more organized approach to the necessary tasks of high school. Instead of blowing off homework assignments, he saw them as small steps that had real and desirable consequences. “I need to get this done. I need to prioritize what I need to do,” he said.

Many schools require graduating seniors to complete a capstone project, typically presented in the spring before a public audience and assessed by a juried panel. With enough prior scaffolding in self-managing their activities, students can treat the senior project as a culminating demonstration that they’re ready for adult life.

Arielle’s excitement came through as she told about planning her senior research at the end of 11th grade. “In one hour,” she said, “I figured out what I wanted to do, what I wanted it to be about, how I’m gonna do it, what form it’s gonna be in. And it’s not just gonna be a paper! It’s gonna be like a 3D pop-up book, and it’s gonna be about art and architecture and all the places I’ve lived in.” Caught up in the flow of talking through and writing down her ideas, Arielle missed the start of her next class. “I was like, the hour didn’t . . . it’s not up yet!”

**IN YOUR PRACTICE:**

What planning do students need to be able to do to succeed academically? How can you help students practice these skills as they complete projects or other learning experiences and embark on new ones?

**Using the Motivation Equation**

Young or old, we all need the “Gr8 8” essential conditions to engage successfully with our learning challenges. Some of them support the “Value” we place on a task, and some enlarge our “Expectancy” that we will succeed at it. But each condition plays a crucial part. Teachers tell me that using the Motivation Equation helps them respond more effectively when student interest and engagement flag — and also when their own motivation falters. As a diagnostic, you simply start by asking, “Do I attach value to what I’m supposed to be doing?” Then you ask, “Do I expect to succeed at this?” Our checklist gives eight ways to turn “no” answers into “yes.”

**Reference**