EDITOR’S NOTE
Critical thinking will always be a crucial skill to teach. This Spotlight will help you determine ways your district can integrate critical thinking into curriculum; learn what skills Microsoft and Verizon would teach students in an ideal scenario; gain insights on the skills employers will be looking for in a post-pandemic world; and understand the role technology will have in building critical thinking skills.

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Critical Thinking
Does Technology Help Boost Students’ Critical Thinking Skills?

By Alyson Klein

Does using technology in school actually help improve students’ thinking skills? Or hurt them?

That’s the question the Reboot Foundation, a nonprofit, asked in a new report examining the impact of technology usage. The foundation analyzed international tests, like the Programme for International Student Assessment or PISA, which compares student outcomes in different nations, and the National Assessment of Educational Progress or NAEP, which is given only in the U.S. and considered the “Nation’s Report Card.”

The Reboot Foundation was started—and funded—by Helen Bouygues, whose background is in business, to explore the role of technology in developing critical thinking skills. It was inspired by Bouygues’ own concerns about her daughter’s education.

The report’s findings: When it comes to the PISA, there’s little evidence that technology use has a positive impact on student scores, and some evidence that it could actually drag it down. As for the NAEP? The results varied widely, depending on the grade level, test, and type of technology used. For instance, students who used computers to do research for reading projects tended to score higher on the reading portion of the NAEP. But there wasn’t a lot of positive impact from using a computer for spelling or grammar practice.

And 4th-graders who used tablets in all or almost all of their classes scored 14 points lower on the reading exam than those who reported never using tablets. That’s the equivalent of a year’s worth of learning, according to the report.

Spending too much time on computers wasn’t helpful.

“There were ceiling effects of technology, and moderate use of technology appeared to have the best association with testing outcomes,” the report said. “This occurred across a number of grades, subjects, and reported computer activities.”

In fact, there’s a negative correlation between time spent on the computer during the school day and NAEP score on the 4th-grade reading NAEP.

That trend was somewhat present, although less clearly, on the 8th-grade reading NAEP.

“Overall usage of technology is probably not just not great, but actually can lower scores and testing for basic education [subjects like math, reading, science],” said Bouygues. “Even in the middle school, heavy use of technology does lower scores, but if you do have things that are specifically catered to a specific subject, that actually serves a purpose.”

For instance, she said her daughter, a chess enthusiast, has gotten help from digital sources in mastering the game. But asking kids to spend a chunk of every day typing on Microsoft Word, as some classrooms do in France, isn’t going to help teach higher-order thinking skills.

She cautioned though, that the report stops short of making a casual claim and saying that sitting in front of a laptop harms students’ ability to be critical thinkers. The researchers didn’t have the kind of evidence needed to be able to make that leap.

Additional Resource

Click here to view National Assessment of Educational Progress Data.
We surveyed classroom teachers and instructional coaches to get authentic feedback about their experiences using ThinkUp! critical thinking resources with their students.

Executive Summary
From rural communities to urban centers, from elementary schools to high schools, principals are driven by a common goal to find ways to close the achievement gap in their communities and ensure that all students are well-prepared for future success.

The intensified spotlight on equity in education further heightens the importance of this goal. Correspondingly, education leaders are increasingly attentive to the quality and rigor of instructional materials used in the classroom, as well as new metrics to evaluate the impact of those materials on student learning outcomes.

Within the list of college and workplace skills that educators view as important for students to acquire, critical thinking is paramount. The expectation is that high quality instructional materials today must not only effectively engage students in learning, but also support deeper, rigorous learning and the development of higher order thinking skills.

Against this backdrop of increased concerns about academic achievement and equity, and the need for enhanced rigor within classroom instructional materials, Project Tomorrow, a nationally recognized, education nonprofit organization, partnered with Mentoring Minds to design and implement a new study to understand the impact of ThinkUp!–critical thinking curriculum materials–on teacher effectiveness and student outcomes.

This survey documents the authentic feedback of 244 classroom teachers and instructional coaches about their experiences using ThinkUp! critical thinking resources with their students.

Key Findings
1. 84% of classroom teachers say that an important benefit of ThinkUp! is how the product supports students' critical thinking skill development. 54% say that this is the most important benefit.
2. Two-thirds of teachers (66%) say that as a result of using ThinkUp!, their students are applying knowledge to solve practical problems and developing critical thinking skills.
3. 59% of teachers say that they are better able to differentiate instruction because of their use of ThinkUp! in the classroom.
4. 85% of teachers agree that the use of ThinkUp! positively impacted their students' academic achievement.
5. 86% of teachers agree that the use of ThinkUp! in the classroom enhanced their effectiveness as teachers.

About the Study
The goal of the Mentoring Minds Teacher Feedback Study was to understand the authentic views of teachers and instructional coaches about their experiences using ThinkUp! curriculum in the classroom. Project Tomorrow designed an online survey to facilitate that data collection process and promoted the survey to educators using the Mentoring Minds products, specifically, ThinkUp! Math and ThinkUp! ELA. The survey tool consisted of a mix of multiple-choice questions, Likert scale items, and narrative response questions. The open period for the data collection was from April 13 through May 3, 2021. In total, 244 classroom teachers and instructional coaches submitted an online survey as part of this study.

Within the list of college and workplace skills that educators view as important for students to acquire, critical thinking is paramount.
Teacher Feedback Study Reveals Impact of Critical Thinking Curriculum

**FINDING #1: An important benefit of ThinkUp! is how the product supports students’ critical thinking skill development.**

Teachers and instructional coaches in the feedback study ascribe many benefits to their use of ThinkUp! within everyday instruction. One of the most significant findings is how teachers connect the use of ThinkUp! with their students’ critical thinking skill development.

This high valuation on critical thinking skill development has its roots in the philosophical background of Mentoring Minds—a pioneer in helping educators understand both the importance of critical thinking within the learning process, and the facilitation of the integration of critical thinking within class curriculum. The work of the company in this area has led to the identification of the 9 Traits of Critical Thinking that should be top of mind for all education leaders interested in developing a school-wide culture that supports student growth and achievement.

**The 9 Traits of Critical Thinking as identified by Mentoring Minds are:**

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**FINDING #2: As a result of using ThinkUp!, students are applying knowledge to solve practical problems and developing critical thinking skills.**

As is often true with the use of instructional materials, regularity and frequency of usage impacts outcomes. Product content focus can also contribute to the difference in outcomes. Such is the case with the respondents in this feedback study. In Project Tomorrow’s examination of teachers’ usage of ThinkUp! Math and ThinkUp! ELA specifically, on average, a higher percentage of teachers cited these capacity-building student outcomes if they used the products at least weekly.

The increased frequency of usage results in a higher percentage of teachers observing the above student outcomes in their classrooms. For example, 57% of the teachers who use the ELA product on a weekly basis say that their students are gaining confidence and self-efficacy and taking greater ownership of their learning as a result of using ThinkUp!

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<th>Student outcomes as a result of using ThinkUp! in the classroom</th>
<th>All teachers and instructional coaches</th>
<th>% of respondents</th>
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<td>Applying knowledge to practical problems</td>
<td>66%</td>
<td>Teachers and instructional coaches who use ThinkUp! Math weekly: 75% Teachers and instructional coaches who use ThinkUp! ELA weekly: 60%</td>
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<tr>
<td>Developing critical thinking and problem-solving skills</td>
<td>66%</td>
<td>Teachers and instructional coaches who use ThinkUp! Math weekly: 71% Teachers and instructional coaches who use ThinkUp! ELA weekly: 68%</td>
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<td>Taking their learning to a deeper level</td>
<td>57%</td>
<td>Teachers and instructional coaches who use ThinkUp! Math weekly: 57% Teachers and instructional coaches who use ThinkUp! ELA weekly: 63%</td>
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<td>Gaining confidence and self-efficacy</td>
<td>49%</td>
<td>Teachers and instructional coaches who use ThinkUp! Math weekly: 55% Teachers and instructional coaches who use ThinkUp! ELA weekly: 57%</td>
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<tr>
<td>Taking ownership of their own learning</td>
<td>44%</td>
<td>Teachers and instructional coaches who use ThinkUp! Math weekly: 51% Teachers and instructional coaches who use ThinkUp! ELA weekly: 57%</td>
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Table: Teachers identify student outcomes by weekly use of ThinkUp! Math and ELA

One of the most significant findings in the feedback study is how teachers connect the use of ThinkUp! with their students’ critical thinking skill development.
FINDING #3: 59% of elementary school teachers say that they are better able to differentiate instruction because of their use of ThinkUp! in the classroom.

Teachers also note the impact of the ThinkUp! resources on students’ academic success—almost two-thirds of the teachers (65%) say that because of ThinkUp! curriculum, their students are better prepared to be successful on standardized assessments. Additionally, 47% say that they attribute their students’ better test scores and grades to the use of ThinkUp! in the classroom.

FINDING #4: 85% of respondents agreed that the use of ThinkUp! positively impacted their students’ academic achievement.

As noted in Project Tomorrow’s review of the findings regarding benefits and outcomes, teachers and instructional coaches see a strong connection between the use of ThinkUp! resources and student achievement and preparation for future success. This includes students’ development of critical thinking skills, their ability to learn content at deeper levels, and increased self-efficacy and confidence in their learning abilities.

FINDING #5: 86% of respondents agreed that the use of ThinkUp! in the classroom enhanced their effectiveness as teachers.

Educational research has long documented the relationship between teacher effectiveness and student achievement. Thus, it is highly significant that the teachers and instructional coaches who are using ThinkUp! on a regular basis point to their increased effectiveness as an educator as an outcome.

Per the teachers’ feedback, ThinkUp! (and related teacher support resources) enables them to provide more rigorous instruction while at the same time supporting individual student needs. This focus on quality of the instructional experience tied with personalization of that process is a powerful combination that can yield strong outcomes.

About Mentoring Minds

Mentoring Minds, a Curriculum Associates company, is on a mission to put critical thinking at the center of K–12 education. Founded by teachers, Mentoring Minds provides resources that empower educators to infuse critical thinking skills into standards-based instruction. Students learn the 9 Traits of Critical Thinking™ through the ThinkUp! curriculum—which provides rigorous materials that elevate achievement among all students.

Learn more! Explore the full findings from this survey at thinkup.fun/outcomes or call us at 844-293-2281.
Documentary Examines Schools That Emphasize Critical Thinking

By Mark Walsh

Here’s a thought: What if there were more critical thinking in our schools? “Re: Thinking,” a documentary, spends time at several public schools that are said to be teaching students how to think, as opposed to what to think.

A school administrator explains early in the hourlong film that young children are naturally curious and teach themselves to walk and talk.

“Over those first few years of life, everything they learn is based on the fact that they want to learn it,” the educator says. “And all of that seems to come to a screeching halt when they get into formal education.”

The film by Deborah C. Hoard and Rachel Ferro is set to have a premiere in Washington, with the requisite panel discussion by some of the educators who appear in the film, as well as a representative from the U.S. Department of Education. The film is going to be available for free online from Oct. 19 to Nov. 2 at www.rethinkingmovie.com.

The documentary does not spend a lot of time laying out criticisms of overly rigid educational practices, although there seems to be plenty the filmmakers could have pointed to, from schools that focus too much on teaching the test to charter schools with inflexible behavioral rules. (Writer Scott Santens had a commentary in Education Week on the topic of teaching critical thinking.)

The three schools featured in “Re: Thinking” seem to be on the progressive side. The film says the three embrace “a culture that values thinking over memorizing information” while still meeting state standards.

The three are Green Hills School, a K-8 school in the Green Township school district in New Jersey; the Bard High School Early College program in Long Island City, Queens, a partner with the New York City school system; and the Lehman Alternative Community School in Ithaca, N.Y.

Derek Cabrera, a cognitive scientist at Cornell University, explains four fundamental patterns of thinking: distinctions, systems, relationships, and perspectives. (The film is based on the work of Cabrera and his wife, Laura Cabrera, the founders of the Cabrera Research Lab at Cornell.)

The goal of teaching thinking “is to produce a citizenry capable of thinking critically and thoughtfully and prepared for the rest of their lives,” one educator says in the film.

There are quite a few talking heads, but this short documentary succeeds in showing aspects of this theory in action at the three schools.

At the Lehman Alternative school, we see students engaged in exercises designed to teach the them to view some hot-button international issues from the perspectives of various stakeholders, including terrorist groups.

At the Bard High School program, educators are implementing the Common Core State Standards while also trying to keep the focus on thinking skills.

“Straddling both worlds is what we’re doing now,” a teacher there says.

At one of the other schools, a student tells his classmates he’s reading the Dale Carnegie classic, How to Win Friends and Influence People.

“It says that 85 percent of your job is based on how well you work with people, and the other 15 percent is your knowledge,” the student says.

“Re:Thinking” seems designed to foster a conversation about teaching methods and how critical thinking can be incorporated in different kinds of schools facing different organizational and accountability pressures.

Consider the conversation started. ■

Video Resource
“You can change everything with one idea” Click here to watch a 2 minute clip explaining more.

Top U.S. Companies: These Are the Skills Students Need in a Post-Pandemic World

By Mark Lieberman

The future of work looks quite a bit different now. The COVID-19 pandemic continues to confound even the most accomplished futurists’ efforts to make predictions about what lies ahead.

Even with that lingering ambiguity, companies have already begun shifting their priorities and rethinking their expectations for the next generation of employees, who will enter the workforce having experienced all manner of unforeseen shifts in the work people are doing and the techniques for doing it well.

In a survey conducted in January 2021 by the EdWeek Research Center, 55 percent of high school teachers, principals, and district leaders said their students’ interest in health care jobs has increased during the pandemic, and 57 percent said the same about jobs in information technology.

Education Week surveyed executives at some of the nation’s leading companies in those industries and several others: hospitality, automotive, and consulting.

Our prompt: Tell us what you’ll want and expect from today’s K-12 students when you’re eventually hiring them, and make suggestions for how schools can provide students with those skills.

Responses have been edited for length and clarity.

Sysco
Michael Fischer, vice president of global talent management

The environment in which organizations operate, and serve their customers and communities, is becoming increasingly volatile, uncertain, complex, and ambiguous—known in the business world as VUCA. In order to thrive in these conditions, companies like Sysco will need future associates with a set of...
skills and capabilities that are fit for this type of dynamic situation. Schools can help by developing students with these capability areas:

- **Agility and Flexibility**: Ability to sense unpredictability and act quickly in response; ability to identify new ideas and approaches. Successful associates need to demonstrate curiosity—ask questions and have the courage to move quickly.

- **Growth Mindset and Resilience**: Desire to continuously learn, and the ability to recover and bounce back from adversity and hardships; building strength and a greater ability to cope. Take ownership and accountability for your situation, develop strategies for reflection and learning.

- **Teamwork and Collaboration**: Desire to work with others different from yourself—different backgrounds, genders, functions, geographies, cultures—to create better, more durable results; and the ability to work as a member of a team to achieve an agreed set of goals.

- **Learn to Learn**: The world is changing fast, and successful companies are evolving even faster to serve their customers and remain competitive. Associates with the ability to identify and anticipate changes in the environment and who can acquire new knowledge and skills will be needed and effective in this environment.

In my mind, the question is what should be done at the local, state, and federal level to support and enable schools to develop students—especially those from poor communities—to enter the workplace with the skills to be successful in the workplace of the future. For example:

- **Start early!** Schools should provide quality, universal pre-K education that is consistent for all children across all schools. This is a primary determinant of school success for students.

- **Schools deserve equitable funding**, especially those in underserved and marginalized communities (typically brown and Black communities) which often lack proper funding.

- **Ensure every child can read before 3rd grade**, another key determinant of long-term success in school and beyond.

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**McKinsey**

*Dirk Schmautzer, education practice partner*

One of the many trends that the COVID-19 pandemic has accelerated is rapidly digitizing and automating workplaces. We see strong evidence that **digitization and automation increases the demand for technological skills, as well as for social and emotional skills**. While the increase in technological skills is obvious, the increase in social and emotional skills is driven by the fact that related activities are more difficult to automate. Therefore, it becomes more important for workers to carry them out competently.

Examples of social and emotional skills include effective teamwork and relationship building. Both skill sets can be developed by refocusing some elements in the K-12 system. For example, to prepare students for the effective teamwork they will need in the workforce, schools can focus on teaching coaching, collaboration, motivating different personalities, fostering inclusiveness, and resolving conflict.

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**Microsoft**

*Mark Sparvell, director of marketing education*

One thing 2020 highlighted was that the future is very hard to predict, which is challenging to concepts of "future ready" and "skills for the future." What we do know is that this dramatic change in itself has provided a unique lens into how future generations can prepare for the unknown ahead.

McKinsey & Company asked global HR professionals about missing skills for an increasingly automated world. They identified problem-solving, critical thinking, innovation, and creativity as being most needed, followed by the ability to deal with ambiguity and complexity.

When we examine how schools can best prepare students to effectively navigate uncertainty and the workforce, recent findings from the Education Endowment Fund in the UK may hold some promising answers. The Fund inquired into the qualities and skills possessed by students who had been successful during this time of remote learning, and identified these traits: **critical thinking and creativity, cognitive flexibility** (ability to deal with ambiguity and change), and **self-regulation**. These are a strikingly similar set of skills to the McKinsey & Company findings. It would appear that the skills that will have the greatest impact in the modern workplace are the same skill sets and mindsets required by students right now to navigate remote learning.

This similarity shows that student-centered approaches that intentionally release control of learning to learners, supported by technology that facilitates connection and collaboration both in schools and remote learning contexts, can support the development of skills and dispositions required to get a job, create a job, or keep a job in the future.
Delta

Ed Bastian, CEO

Education is one of the core pillars of Delta’s community involvement—we’re committed to advancing education equitably in our communities and helping to shape the lives of our future employees and customers. The pandemic has made it clear that innovative, global, and strategic thinking will be more important than ever to every skillset as the world moves into recovery and rebirth. Our educational institutions need to adapt to ensure our children can participate and compete on an increasingly connected world stage. To that end, Delta is proud to be partnering with Atlanta Public Schools and 3DE, which is helping to re-engineer public education to empower students to unlock greater economic opportunity in today’s global society. 3DE operates in seven U.S. cities, including our hometown of Atlanta, and provides real-world case studies to help students develop key skills for success throughout their lives.

Apple

Susan Prescott, vice president of worldwide developer relations and product marketing for enterprise & education

This year has been unprecedented. Teachers have worked tirelessly to ensure their students could continue learning, despite the many challenges posed by the COVID-19 pandemic, and we’ve been inspired by their dedication to help students engage and build community, to have conversations about race and social justice, to build new skills in coding and embrace their innate creativity and curiosity.

As students look ahead to their future careers, coding continues to be a foundational skill that embodies creativity, critical thinking, collaboration, and problem-solving—important proficiencies to bring into the workplace. Learning to code helps students build these skills and brings opportunities, no matter what career they pursue. This is why we’ve invested in creating free and comprehensive coding curriculum and professional learning for schools from elementary to higher education, and why we’ve partnered with educators across the country to ensure they have the tools to share these resources with their students.

We’ve seen firsthand how coding has transformed the global economy, creating entirely new industries and supporting millions of jobs. The iOS app economy alone now supports more than 2.1 million jobs across all 50 states, helping to provide opportunities for Americans of all ages. We see this continuing to grow, creating boundless opportunities for today’s students.

Boston Consulting Group

Nithya Vaduganathan, managing director and partner; Renee Laverdier, partner

Work and organizational models have remained mostly unchanged since the Industrial Revolution when people needed to work in close proximity to coordinate, collaborate, and co-create. Many companies used the pandemic as an opportunity to reimagine how work gets done. In many industries and jobs, the pandemic proved many jobs can be done in a more hybrid and remote fashion—and made it even more clear where digital tools, data, and technology can help. However, a one-size-fits-all approach won’t be the answer to future work models; employee preferences for the future are highly varied.

In a global survey BCG conducted of 12,000 employees, 40 percent desire flexibility in when and where they work, but an almost equal portion of the workforce wants the structure of fixed time and place. Regardless of the model, being satisfied with social connectivity is critical: People who are satisfied are 3.2 times more likely to feel as or more productive than pre-COVID.

As a result, the worker of the future will need refined skills in managing their work, a broader range of communication styles, and the ability to manage a fragmented suite of collaboration tools and technologies. While many students in K-12 are getting learning opportunities in these skills with remote/hybrid learning, students need help developing a growth mindset, becoming more self-directed and disciplined, learning to prioritize, and overall more digital fluency.

Blue Cross Blue Shield Association

Kelly Williams, senior vice president and chief human resources officer

Sponsoring Take Our Daughters & Sons to Work Day has always been a highlight for me—from seeing and feeling the pride of Team BCBSA as they introduced their children to their colleagues to the joy and curiosity of their children as they explored our workplaces and the world of work with their parents.

Enter 2020 and what used to be an annual event is now a daily immersion shaping all of us—children, parents, colleagues, employers. Yes, our ability to engage, adapt, and respond to change is important—further illuminated by the pandemic—and still self-awareness and personal well-being remain at the top of my development list.

In my experience, how well we know ourselves, combined with how well we take care of ourselves—at work and in life—influences everything. Which is why I’d love to see equanimity as a core competency in schools. At the heart of it, it’s about being versus doing. Being grounded. Being centered. Regardless of what’s happening. Like all skills, it requires practice. Just imagine the possibilities of an equanimity—based curriculum!

CareFirst BlueCross BlueShield

Angela Celestin, executive vice president and chief human resources officer

With the onset of the COVID-19 pandemic, the skills of empathy, openness to continued growth, and being self-motivated as well as the ability to express oneself have become increasingly more important and need to be continually developed.

This pandemic has shown us the importance of emotional intelligence, especially empathy. Empathy is critical to the success of every person and team. Practicing empathy is the first step to unlocking the value of each other’s diversity. Empathy can be defined as the ability...
to vicariously experience someone else’s feelings, thoughts, or attitudes—in other words, it’s walking a mile in someone else’s shoes. Once you do that, then you can begin to fully appreciate and leverage diversity effectively.

Openness to continued growth and self-motivation will be key to being successful in the future. New jobs and careers are emerging every day and as they emerge there are new skills that need to be learned or adapted. Technology will continue to change how we work and will require us to constantly learn new skills or apply our current ones in a different context. This relates to the work that we do individually but even more importantly to the ways in which we work together.

The ability to express oneself is not just about writing the best paper or delivering the most effective presentation. It’s about understanding how to be vulnerable and honest in a variety of settings, whether virtual or in person, to develop trust and respect with others. At CareFirst, we strive to nurture belonging—One Company, One Team. We consciously seek to understand and practice empathy to instill a sense of community. To nurture belonging is to create an environment where every person feels like a member regardless of their experience, position, background or identity. In CareFirst’s inclusive work environment, it is important that each associate feels supported across the organization and feels a shared connection with their colleagues.

These things along with personal accountability combine to enable effective teamwork, which we will continue to need.

Schools play a critical role in developing the talent in future generations. The skills that children pick up early on from developing relationships with their teachers and each other will continue to be the foundational component to success. Teachers that offer nurturing environments and flexibility so that students feel comfortable bringing their whole self to school will be the most effective teachers in the future—producing the most engaged students.

Finally, classrooms that integrate technology and creativity effectively will provide students the opportunity to develop a passion for finding new ways to view the world and constantly learn.

Chrysler

Lottie Holland, director of talent acquisition, diversity, inclusion, and engagement

Our rapid transition to the virtual environment has accelerated the importance of communicating effectively through a host of mobile devices and digital platforms. Unlike in-person interactions, virtual environments inhibit reading and responding timely to many critical nonverbal cues.

Students today need to develop and refine skills to communicate clearly, concisely, and with intention in their work, client, and personal relationships, through courses focusing on presentation skills, effective writing, and more.

Cigna

Dr. Stuart Lustig, senior medical director

There is an urgent need for our schools to focus on ways to build healthier and more resilient communities. This need has been accelerated by the global pandemic, which has further exposed significant health disparities that disproportionately impact underserved communities. As part of Cigna’s commitment to whole person health, we have been researching resilience, defined as our ability to quickly recover from challenges, to better understand its building blocks and how people can develop the skills to overcome adversity and ultimately thrive.

Our research uncovers real costs that can be associated with low levels of resilience: For many students today, low resilience is connected to worse physical health, higher rates of stress and anxiety, feelings of low self-esteem and self-worth and poorer academic performance. In the workforce, low resilience is connected to lower engagement with colleagues, lower productivity and professional ambition, and higher turnover.

The data also shows that resilience is a skill that resides in every person from an early age. Resilience is at its highest levels in young children, yet as children grow into their teenage years, we start to see resilience levels fall sharply—by as much as 50 percent by the time young people reach ages 18-23. This resilience curve is alarming—not only is Gen Z the least resilient generation, but they are also the loneliest, according to our previous studies on loneliness.

However, resilience is like a muscle that can be strengthened throughout a person’s life. To build a more resilient generation and future workforce, it’s critical that today’s students have the support they need—resources and personal skills—to continue to build that muscle. Teachers, coaches, and parents play a critical role by encouraging resilience-building factors: practicing good physical and mental health, staying active and practicing stress-reduction activities, building connections—through two-way conversation, mentorship, dialogue on difficult topics, fostering inclusivity and being surrounded by a diverse community. Our research shows all these things can help young people, and even adults, develop their resilience skill set.

General Motors

Telva McGruder, chief of diversity, equity, and inclusion

The past year has really underscored the importance of nurturing in our employees a balance of professional resilience and adaptability. The rate of change in many industries—including our automotive and technology environment—is moving at such a rapid pace that, even outside of the context of a global pandemic, we need our employees to remain nimble and persevere through whatever comes their way.

The ability to thrive in the face of monumental change, while maintaining some semblance of day-to-day stability both personally and professionally, requires muscle development that we often do not acknowledge until we’re faced with an adversity that demands those muscles. The pandemic absolutely called on each of us as individuals and as teams to focus on our ability to keep going amidst heightened ambiguity and uncertainty. There’s no doubt we are collectively going to need to keep these muscles in shape for the years to come.

Our schools excel at teaching students how to learn, with specific attention paid to common cycles of behavior (if x, then y). If we could...
expand this to accommodate more styles of learning and introduce to students the concept of learning agility as a core skill, it would help to harness the resilience and adaptability that so many children already have developed, for better or worse, especially those dealing with the challenges presented by resource scarcity.

Encouraging and nurturing the positive elements of resilience and adaptability—inner strength, the ability to bounce back after a failure, and the courage to try something new, for example, can go a long way to prepare a student for future success in the workplace. It is on us as educators and employers to help frame these skills—whether learned deliberately or because of one’s circumstances—and further develop the learning agility that these skills enable. We can and should uplift resilience and adaptability as skills for achievement in any work environment.

**Hyatt**

*Malaika Myers, chief human resources officer*

Hospitality is unique because it’s one of the few remaining industries where people can start in entry-level roles and build fulfilling, lifelong careers. When we welcome new colleagues, we are prepared to teach them the skills they need to be successful in their roles so in the hiring process, we’re really looking for soft skills.

At Hyatt, our purpose is to care for people so they can be their best and delivering on our purpose requires a strong level of empathy—understanding what our guests need in order to really care for them. To manage through the pandemic, we relied on collaboration, inclusion, and a mindset of experimentation to reimagine our business. These types of soft skills will be critically important for the workforce of the future.

Alongside fostering development of soft skills, schools should seek opportunities to connect students with real-life work experiences. Across our global Hyatt portfolio, we have found success in collaborating with community-based organizations to introduce young people to the hospitality industry and connect them with employment opportunities as part of our RiseHY hiring program. In our hometown of Chicago, we continue to build on our longstanding relationship with the Chicago Urban League to provide internships to high school students at our corporate office so they can gain real-world experience and explore opportunities in our industry.

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**OPINION**

*Published on September 22, 2021*

**You Can Motivate Students to Accelerate Learning This Year**

How do we help students deal with learning loss from the pandemic?

*By Angela Duckworth*

The way you talk to students about learning matters—and so does your teaching strategy. Here’s something I wrote about the topic for Character Lab as a Tip of the Week:

“*I’m really worried about you. You’ve fallen behind. You’re nowhere close to where you need to be at this point.*”

How would you feel if, on the first day of school, you were on the receiving end of this assessment? You might respond to such discouraging news by doubling your motivation to succeed. I’ll show you, you say under your breath. I have what it takes.

But much more common, I think, is the opposite reaction: I’m never going to catch up. I have the I’ll-show-you response.

Which is why many educators and psychologists advocate an “asset-based” approach to teaching and parenting.

For the longest time, I didn’t really know what that meant. Sure, I nodded my head in agreement when my colleagues in positive psychology said that it was more useful to focus on strengths than to remediate weaknesses. Yes, I liked the idea of capitalizing on assets.

But truth be told, I didn’t fully grasp the problem with remediating weaknesses.

After all, experts get better at what they do by zeroing in on what they need to do better. Blithely ignoring our failings seems a poor recipe for character development. And when I’m told that I can’t do something, reflexively, I have the I’ll-show-you response.

But I’m beginning to see the light.

An analysis of more than 2 million students in over 100,000 schools suggests that acceleration is a more effective pedagogical strategy than remediation. Specifically, students made more progress in math when their teachers taught grade-level content and used just-in-time support to patch learning gaps as needed compared with when teachers instead took a more traditional approach, teaching below-grade-level content to make up for pandemic-related learning loss.

The Latin root for remediation means “to heal.” The Latin root for acceleration means “to hasten.” The distinction is subtle and yet, in terms of motivation, can make a world of difference. If you need to be healed, you must be broken. If you deserve to be hastened, you must be a champion.

Don’t panic. If the young person in your life suffered setbacks during the pandemic, it doesn’t mean they’re broken. It means this is a unique opportunity to cover more ground than ever.

Do start looking for success stories. As veteran educator Ron Berger reminds us, the secret to motivating kids is to raise expectations and then provide the support needed to meet them. In word and in deed, tell your kids: “I’m really excited for you. You’re going to race ahead this year. You’re going to learn more than you did last year, and you’re going to feel so proud.”

Angela Duckworth is a behavioral-science expert offering advice to teachers based on scientific research.
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STANDARDS MASTERY THROUGH CRITICAL THINKING

In partnership with
Integrating Critical Thinking Into the Classroom

By Larry Ferlazzo

The question-of-the-week is:

What is critical thinking and how can we integrate it into the classroom?

Dr. Kulvarn Atwal, Elena Quagliarello, Dr. Donna Wilson, and Diane Dahl share their recommendations.

‘Learning Conversations’

Dr. Kulvarn Atwal is currently the executive head teacher of two large primary schools in the London borough of Redbridge. Dr. Atwal is the author of The Thinking School: Developing a Dynamic Learning Community, published by John Catt Educational. Follow him on Twitter @Thinkingschool2:

In many classrooms I visit, students’ primary focus is on what they are expected to do and how it will be measured. It seems that we are becoming successful at producing students who are able to jump through hoops and pass tests. But are we producing children that are positive about teaching and learning and can think critically and creatively? Consider your classroom environment and the extent to which you employ strategies that develop students’ critical-thinking skills and their self-esteem as learners.

Development of self-esteem

One of the most significant factors that impacts students’ engagement and achievement in learning in your classroom is their self-esteem. In this context, self-esteem can be viewed to be the difference between how they perceive themselves as a learner (perceived self) and what they consider to be the ideal learner (ideal self). This ideal self may reflect the child that is associated or seen to be the smartest in the class. Your aim must be to raise students’ self-esteem. To do this, you have to demonstrate that effort, not ability, leads to success. Your language and interactions in the classroom, therefore, have to be aspirational—that if children persist with something, they will achieve.

Use of evaluative praise

Ensure that when you are praising students, you are making explicit links to a child’s critical thinking and/or development. This will enable them to build their understanding of what factors are supporting them in their learning. For example, often when we give feedback to students, we may simply say, “Well done” or “Good answer.” However, are the students actually aware of what they did well or what was good about their answer? Make sure you make explicit what the student has done well and where that links to prior learning. How do you

value students’ critical thinking—do you praise their thinking and demonstrate how it helps them improve their learning?

Learning conversations to encourage deeper thinking

We often feel as teachers that we have to provide feedback to every students’ response, but this can limit children’s thinking. Encourage students in your class to engage in learning conversations with each other. Give as many opportunities as possible to students to build on the responses of others. Facilitate chains of dialogue by inviting students to give feedback to each other. The teacher’s role is, therefore, to facilitate this dialogue and select each individual student to give feedback to others. It may also mean that you do not always need to respond at all to a student’s answer.

Teacher modelling own thinking

We cannot expect students to develop critical-thinking skills if we aren’t modeling those thinking skills for them. Share your creativity, imagination, and thinking skills with the students and you will nurture creative, imaginative critical thinkers. Model the language you want students to learn and think about. Share what you feel about the learning activities your students are participating in as well as the thinking you are engaging in. Your own thinking and learning will add to the discussions in the classroom and encourage students to share their own thinking.

Metacognitive questioning

Consider the extent to which your questioning encourages students to think about their thinking, and therefore, learn about learning! Through asking metacognitive questions, you will enable your students to have a better understanding of the learning process, as well as their own self-reflections as learners. Example questions may include:

• Why did you choose to do it that way?
• When you find something tricky, what helps you?
• How do you know when you have really learned something?

‘Adventures of Discovery’

Elena Quagliarello is the senior editor of education for Scholastic News, a current events magazine for students in grades 3–6. She graduated from Rutgers University, where she studied

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Q & A

OPINION

Critical Thinking
English and earned her master’s degree in elementary education. She is a certified K-12 teacher and previously taught middle school English/language arts for five years:

Critical thinking blasts through the surface level of a topic. It reaches beyond the who and the what and launches students on a learning journey that ultimately unlocks a deeper level of understanding. Teaching students how to think critically helps them turn information into knowledge and knowledge into wisdom. In the classroom, critical thinking teaches students how to ask and answer the questions needed to read the world. Whether it’s a story, news article, photo, video, advertisement, or another form of media, students can use the following critical-thinking strategies to dig beyond the surface and uncover a wealth of knowledge.

A Layered Learning Approach

Begin by having students read a story, article, or analyze a piece of media. Then have them excavate and explore its various layers of meaning. First, ask students to think about the literal meaning of what they just read. For example, if students read an article about the desegregation of public schools during the 1950s, they should be able to answer questions such as: Who was involved? What happened? Where did it happen? Which details are important? This is the first layer of critical thinking: reading comprehension. Do students understand the passage at its most basic level?

Ask the Tough Questions

The next layer delves deeper and starts to uncover the author’s purpose and craft. Teach students to ask the tough questions: What information is included? What or who is left out? How does word choice influence the reader? What perspective is represented? What values or people are marginalized? These questions force students to critically analyze the choices behind the final product. In today’s age of fast-paced, easily accessible information, it is essential to teach students how to critically examine the information they consume. The goal is to equip students with the mindset to ask these questions on their own.

Strike Gold

The deepest layer of critical thinking comes from having students take a step back to think about the big picture. This level of thinking is no longer focused on the text itself but rather its real-world implications. Students explore questions such as: Why does this matter? What lesson have I learned? How can this lesson be applied to other situations? Students truly engage in critical thinking when they are able to reflect on their thinking and apply their knowledge to a new situation. This step has the power to transform knowledge into wisdom.

Adventures of Discovery

There are vast ways to spark critical thinking in the classroom. Here are a few other ideas:

• **Critical Expressionism**: In this expanded response to reading from a critical stance, students are encouraged to respond through forms of artistic interpretations, dramatizations, singing, sketching, designing projects, or other multimodal responses. For example, students might read an article and then create a podcast about it or read a story and then act it out.

• **Transmediations**: This activity requires students to take an article or story and transform it into something new. For example, they might turn a news article into a cartoon or turn a story into a poem. Alternatively, students may rewrite a story by changing some of its elements, such as the setting or time period.

• **Words Into Action**: In this type of activity, students are encouraged to take action and bring about change. Students might read an article about endangered orangutans and the effects of habitat loss caused by deforestation and be inspired to check the labels on products for palm oil. They might then write a letter asking companies how they make sure the palm oil they use doesn’t hurt rain forests.

• **Socratic Seminars**: In this student-led discussion strategy, students pose thought-provoking questions to each other about a topic. They listen closely to each other’s comments and think critically about different perspectives.

• **Classroom Debates**: Aside from sparking a lively conversation, classroom debates naturally embed critical-thinking skills by asking students to formulate and support their own opinions and consider and respond to opposing viewpoints.

Critical thinking has the power to launch students on unforgettable learning experiences while helping them develop new habits of thought, reflection, and inquiry. Developing these skills prepares students to examine issues of power and promote transformative change in the world around them.

‘Quote Analysis’

Dr. Donna Wilson is a psychologist and the author of 20 books, including Developing Growth Mindsets, Teaching Students to Drive Their Brains, and Five Big Ideas for Effective Teaching (2nd Edition). She is an international speaker who has worked in Asia, the Middle East, Australia, Europe, Jamaica, and throughout the U.S. and Canada. Dr. Wilson can be reached at donna@brainsmart.org; visit her website at www.brainsmart.org.

Diane Dahl has been a teacher for 13 years, having taught grades 2-4 throughout her career. Mrs. Dahl currently teaches 3rd and 4th grade GT-ELAR/SS in Lovejoy ISD in Fairview, Texas. Follow her on Twitter at @DahlD, and visit her website at www.fortheloveofteaching.net:

A growing body of research over the past several decades indicates that teaching students how to be better thinkers is a great way to support them to be more successful at school and beyond. In the book, Teaching Students to Drive Their Brains, Dr. Wilson shares research and many motivational strategies, activities, and lesson ideas that assist students to think at higher levels. Five key strategies from the book are as follows:

• Facilitate conversation about why it is important to think critically at school and in other contexts of life. Ideally, every student will have a contribution to make to the discussion over time.

• Begin teaching thinking skills early in the school year and as a daily part of class.

• As this instruction begins, introduce students to the concept of brain plasticity and how their brilliant brains change during thinking and learning. This can be highly motivational for students who do not yet believe they are good thinkers!

• Explicitly teach students how to use the thinking skills.

• Facilitate student understanding of how the thinking skills they are learning relate to their lives at school and in other contexts.

Below are two lessons that support critical thinking, which can be defined as the objective analysis and evaluation of an issue in order to form a judgment.

Mrs. Dahl prepares her 3rd and 4th grade classes for a year of critical thinking using quote analysis.

During Native American studies, her 4th
grade analyzes a Tuscarora quote: “Man has responsibility, not power.” Since students already know how the Native Americans’ land had been stolen, it doesn’t take much for them to make the logical leaps. Critical-thought prompts take their thinking even deeper, especially at the beginning of the year when many need scaffolding. Some prompts include:

- **What ethical connections can you make to the quote?**
  - ... from the point of view of the Native Americans?
  - ... from the point of view of the settlers?

- **How can you apply this quote to your life?**
  - How do you think your life might change over time as a result?

- **Can you relate this quote to anything else in history?**

Analyzing a topic from occupational points of view is an incredibly powerful critical-thinking tool. After learning about the Mexican-American War, Mrs. Dahl’s students worked in groups to choose an occupation with which to analyze the war. The chosen occupations were: anthropologist, mathematician, historian, archaeologist, cartographer, and economist. Then each individual within each group chose a different critical-thinking skill to focus on. Finally, they worked together to decide how their occupation would view the war using each skill.

For example, here is what each student in the **economist** group wrote:

- **Student 1 critical-thinking skill: Point of View**
  - When U.S.A. invaded Mexico for land and won, Mexico ended up losing income from the settlements of Jose de Escandon. The U.S.A. thought that they were gaining possible tradable land, while Mexico thought that they were losing precious land and resources.

- **Student 2 skill: Changing Over Time**
  - Whenever Texas joined the states, their GDP skyrocketed. Then they went to war and spent money on supplies. When the war was resolving, Texas sold some of their land to New Mexico for $10 million. This allowed Texas to pay off their debt to the U.S., improving their relationship.

- **Student 3 skill: Converging Details**
  - A detail that converged into the Mexican-American War was that Mexico and the U.S. disagreed on the Texas border. With the resulting treaty, Texas ended up gaining more land and economic resources.

- **Student 4 skill: Trend**
  - Texas gained land from Mexico since both countries disagreed on borders. Texas sold land to New Mexico, which made Texas more economically structured and allowed them to pay off their debt.

This was the first time that students had ever used the occupations technique. Mrs. Dahl was astonished at how many times the kids used these critical skills in other areas moving forward.

Thanks to Dr. Anwal, Elena, Dr. Wilson, and Diane for their contributions!

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