ESSENTIAL 21ST-CENTURY SKILLS FOR A POST-PANDEMIC WORLD

Due to the unprecedented disruptions caused by the greatest health crisis in over a century, educators and parents have been forced to rethink classic educational strategies. Gone are many of the structured in-person classes that have become fixtures of K-12 schooling. In their place, due to the social distancing guidelines adopted to slow the spread of COVID-19, schools across the country have turned to virtual and blended learning techniques.

By nearly all accounts, this sudden transition has been difficult for everyone involved. With little time for training and preparation, teachers have had to replace their scheduled curricula with online lessons.[1] To ensure these go smoothly and that assignments are completed consistently, many parents and guardians have had to provide hours of daily supervision and support.[2] While children tend to be more flexible learners than adults[3], a combination of factors including technical difficulties, distractions at home and the yearning for social interactions with friends have made learning from home challenging for many.[4]

Preparing students to thrive during these uncertain times might on the surface seem overwhelming. Fortunately, educators can find inspiration in 21st-century skills — a set of competencies identified by educators, administrators, employers and others as essential to thriving in our rapidly changing world.[5] Of these, critical thinking, collaboration and adaptability will prove to be increasingly crucial for students to develop in response to our new COVID-19 reality.

CRITICAL THINKING: VITAL FOR IDENTIFYING MISINFORMATION

The ability to analyze information to make well-reasoned decisions is at the foundation of navigating complex situations. Though traditional schooling has long relied on lectures and testing that rewards rote memorization, scenarios in the real world rarely have simple right or wrong solutions.

Despite this reality, according to Colin Seale, contributor for Forbes and author of "Thinking Like a Lawyer: A Framework for Teaching Critical Thinking to All Students," critical thinking as a learning outcome is largely still considered a luxury good. In an article for Forbes, Seale argues that this skill is needed now more than ever.

"With the mass shutdowns across the country and throughout the world, this is a live example of the type of thinking young people need to navigate the uncertainties they will undoubtedly face when they come of age," Seale said. "This pandemic and our reactions to this once-in-a-century health crisis drive home the need to equip all young people with critical thinking skills and dispositions."[6]

While such skills are championed by employers who wish to cultivate a workplace filled with independent thinkers[7], especially during this global pandemic, teaching students how to think critically can also help them protect both themselves and the people they care for. Due to the unfortunate spread of conspiracy theories and misinformation surrounding COVID-19[8], listening to unqualified or even ill-intentioned sources can have harmful consequences. Instead, by showing students that sources have varying degrees of credibility, especially when it comes to COVID-19, you will help them feel more confident in making informed decisions.

A Camp Invention Connect™ participant explores the contents of an activity kit.

1. Adams, C. (2020, April 17). Coronavirus 'confusion': Teachers had little training for how to do online classes. Retrieved June 10, 2020, from https://www.usatoday.com/story/news/education/2020/04/17/coronavirus-teachers-online-class-school-closures/2972529001/

2. Mandel, B. (2020, April 20). Distance Learning Isn't Working. Retrieved June 10, 2020 https://www.theatlantic.com/ideas/archive/2020/04/just-give-distance-learning/610222/

3. Lucas, C. G., Bridgers, S., Griffiths, T. L., & Gopnik, A. (2014). When children are better (or at least more open-minded) learners than adults: Developmental differences in learning the forms of causal relationships. Nagnition, 131(2), 284-299. doi:10.1016/j.cognition.2013.12.010

4. Network, T. L. (2020, April 09). What Students Are Saying About Remote Learning. Retrieved from https://www.nytimes.com/2020/04/09/learning/what-students-are-saying-about-remote-learning.html

5. Boss, S. (2019, February 05). It's 2019. So Why Do 21st-Century Skills Still Matter? - EdSurge News. Retrieved June 22, 2020, from https://www.edsurge.com/news/2019-01-22-its-2019-so-why-do-21st-century-skills-still-matter

6. Seale, C. (2020, April 11). The Case For Critical Thinking: The COVID-19 Pandemic And An Urgent Call To Close The Critical Thinking Gap In Education. Retrieved June 22, 2020, from https://www.forbes.com/sites/colinseale/2020/04/10/the-case-for-critical-thinking-the-covid-19-pandemic-and-an-urgent-call-to-close-the-critical-thinking-gap-in-education/

7. Korn, M. (2014, October 21). Bosses Seek 'Critical Thinking,' but What Is That? Retrieved June 22, 2020, from https://www.wsj.com/articles/bosses-seek-critical-thinking-but-what-is-that-1413923730

8. Ball, P., & Maxmen, A. (2020, May 27). The epic battle against coronavirus misinformation and conspiracy theories. Retrieved June 22, 2020, from https://www.nature.com/articles/d41586-020-01452-z

Because critical thinking is only as effective as the quality of the information being analyzed and ultimately acted upon, gathering reputable material is of the utmost importance. In regard to COVID-19, listening to organizations like the Centers for Disease Control and Prevention and Johns Hopkins University Coronavirus Resource Center will help the students in your care stay healthy and safe throughout the duration of the pandemic.

COLLABORATION: KEY TO DEVELOPING EFFECTIVE SOLUTIONS

Though admittedly more difficult to embrace fully in distance and blended learning environments, the ability to collaborate will be an increasingly important skill in a post-COVID-19 world.

In an article published by the World Economic Forum, Sandy Mackenzie, director of the Copenhagen International School, and Poornima Luthra, founder and chief consultant of TalentED Consultancy ApS, argue that because COVID-19 is a global crisis, education must account for the fact that we live in an interconnected world.[9]

"COVID-19 is a pandemic that illustrates how globally interconnected we are – there is no longer such a thing as isolated issues and actions," the educators said. "Successful people in the coming decades need to be able to understand this interrelatedness and navigate across boundaries to leverage their differences and work in a globally collaborative way."[10]

In addition to producing more creative and effective ideas, according to the National Education Association, group work has the added benefit of developing crucial interpersonal skills, as well as boosting confidence and self-esteem.[11]

While group work and activities that build community are often practiced in classrooms across the country, the limitations of virtual learning have made creating collaborative environments more difficult. Because classroom culture is crucial to fostering trusting communities, it is helpful to adapt a few standard classroom community-building practices to this new environment.

In an article published in Edutopia, Leah Henry, a high school history teacher and curriculum writer, suggests a number of strategies, including establishing a digital community agreement and cultivating a culture of trust and respect.

Just as traditional classrooms have established rules and guidelines, Henry advises teachers to create a code of conduct for online learning as well. "The key to building a culture is revisiting these agreements during every class session," Henry said. "Have students determine how well they lived the agreements as a reflection exit ticket or opener for the week."

With a set of agreed upon rules, educators can begin building a healthy and supportive culture by making sure to engage with each student individually. For Henry, this can take the form of daily contact with a phone call, email or text announcements. Even when a student has technical difficulties, they should still be contacted. In this case, alternate methods of communication, including handwritten letters, can be beneficial.[12]

Additionally, embracing a video application's "breakout room" feature is another way to encourage group work. In these scenarios, each student can be assigned a certain job (timekeeper, note taker, etc.). These small jobs help to create a sense of accountability and respect, setting the expectation that everyone in the class has something valuable to contribute.[13]

ADAPTABILITY: CRUCIAL FOR OVERCOMING OBSTACLES

One of the most challenging aspects of both teaching and learning in our current environment is that each day brings unpredictability. For students who rely on daily routines to keep them focused and engaged, this new normal has been particularly challenging. In an article published in The Atlantic, Bethany Mandel explains that these difficulties are exacerbated by the fact that COVID-19 has affected the families of each student in different ways.

A Camp Invention Connect participant is excited to open her activity kit.

9. Written by Poornima Luthra, F. (2020, March 30). 4 ways COVID-19 could change how we educate future generations. Retrieved June 22, 2020, from https://www.weforum.org/agenda/2020/03/4-ways-covid-19-education-future-generations/
10. Ibid.,
11. Gates, S. (2018, November 08). Benefits of Collaboration. Retrieved June 22, 2020, from http://neatoday.org/new-educators/benefits-of-collaboration/
12. Henry, L. (2020, May 01). Fostering a Strong Community in a Virtual Classroom. Retrieved June 22, 2020, from https://www.edutopia.org/article/fostering-strong-community-virtual-classroom
13. Ibid.,
14. Mandel, B. (2020, April 20). Distance Learning Isn't Working. Retrieved June 22, 2020, from https://www.theatlantic.com/ideas/archive/2020/04/just-give-distance-learning/610222/

"The situation into which almost every parent in America has now suddenly and unwillingly been thrust could not be more different," Mandel said. "One-size-fits-all education barely works in a classroom, but it's completely unmanageable with kids spread out across their various households working independently."[14]

While there is no way to prepare children for every unique challenge they might encounter during these unprecedented times, helping them develop the ability to adapt can aid them in handling situations that might at first seem overwhelming.

In an article published in The Conversation, Andrew Martin, professional research fellow at the University of Sydney, argues that adaptability is a trait that can in fact be taught. According to his research, educators can begin by explaining to students that change is not "bad or undesirable," but rather it is inevitable and creates opportunities for new ideas and solutions.[15]

It can also be helpful to incorporate projects and activities that embrace a growth mindset (the belief that intelligence and ability can improve over time) as opposed to a fixed mindset (the belief that these traits are static and unchanging).[16] By completing projects that require brainstorming and prototyping, students will naturally come to realize both that their ideas have value

and that improvement is always possible. The self-confidence developed through exercises like these will come in handy when students confront trying situations in their own lives.

ENCOURAGING AN INNOVATION MINDSET

Though we are already two decades into the 21st century, the idea that we must prepare today's students with skills that allow them to thrive in our increasingly complex world has never been more important. As futurist Alvin Toffler predicted back in 1970, "the illiterate of the 21st century will not be those who cannot read and write, but those who cannot learn, unlearn and relearn."[17]

Through all our education programs at the National Inventors Hall of Fame®, we seek to help students develop an Innovation Mindset – a growth mindset infused with lessons from world-changing inventors – that will serve them throughout their lives. While COVID-19 has brought with it a new set of challenges educators must confront, we are confident that this too presents an opportunity to rethink education and consider brand new ways to inspire children to invent the future.

A Camp Invention Connect participant plays with his LINK robot.

15. Martin Professorial Research Fellow, A. (2020, June 21). Coping with change: Teaching adaptability will help kids grow. Retrieved June 22, 2020, from https://theconversation.com/coping-with-change-teaching-adaptability-will-help-kids-grow-19726
16. Dweck, C. The Impact of a Growth Mindset. Retrieved June 22, 2020, from https://www.mindsetworks.com/science/Impact
17. Toffler, A. (2016). Alvin Toffler. Retrieved June 22, 2020, from https://www.oxfordreference.com/view/10.1093/acref/9780191826719.001.0001/q-oro-ed4-00010964