National Inventors Hall of Fame®

HYBRID LEARNING IN A TIME OF UNCERTAINTY

There is no getting around it: the difficulties caused by COVID-19 have continued to challenge students, parents and educators alike. Due to the need to socially distance in order to prevent the spread of this virus, educators have had to adapt their in-person teaching and employ blended and remote approaches to instruction.

Unfortunately, when many school districts across the country applied remote learning methods in the spring, they were met with mixed results.[1] A lack of time to prepare, technical difficulties and unpredictable at-home situations combined to subvert even the most well-intended plans.

With the uncertainty of the 2020-2021 school year causing new concerns and challenges for educators and administrators, it is helpful to develop plans that can adapt to both in-school and at-home settings. This will provide both peace of mind and a strategy that ensures students will benefit from effective, engaging education, no matter where learning takes place.

Understanding the Importance of Student Engagement

An engaged student is one who is interested, curious and passionate about what they're learning. Unsurprisingly, engagement not only makes school more enjoyable but also leads to improved academic outcomes. A recent Gallup study including 128 schools and more than 110,000 students confirms this, finding schools that scored in the top quartile of student engagement "had significantly more students exceeding and meeting proficiency requirements than schools in the bottom quartile of engagement."[2]

Increased student engagement has also been shown to drastically lower incidents of negative student behavior, and a 2018 Gallup study found that schools with higher student engagement have 65% fewer student suspensions, 93.75% fewer student expulsions and 52.3% fewer chronically absent students as compared to schools that scored in the bottom engagement quartile.[3]

Throughout their careers, teachers have developed excellent ways to keep their students both interested and motivated in the classroom, from encouraging collaborative group work to incorporating hands-on activities that demonstrate academic subjects in accessible ways. Unfortunately, strategies that may work in an in-person setting do not always translate virtually.

In fact, in the spring of this year, when many schools around the country transitioned to online learning, many teachers reported the troubling fact that their students were not showing up for their virtual lessons.

In an article published by Education Week, former K-5 public school principal and education consultant Peter DeWitt categorized many of the common reasons for these absences. A few of these include:

Common Reasons for Lack of Virtual Learning Participation

Lack of internet access – Not all students have reliable internet access, or a computer to successfully complete assignments. Simply put, without access to online classes, children are unable to participate.

Financial constraints – To support their families, some older students have started working. Additionally, parents might have work schedules that prevent them from helping younger students access virtual lessons.

Lack of personal space – In a home environment, not all students have bedrooms or quiet workspaces to themselves. Without a specific place to focus, it is difficult for students to engage with their instructors or classmates in a virtual setting.

Weak student-teacher connection – For students who did not have a strong personal connection with their teachers in a physical classroom, some feel like they won't be missed in a virtual one.[4]

Two students develop their prototyping skills while enjoying Invention Project® K-6.

1. Carey, B. (2020, June 13). What We're Learning About Online Learning. Retrieved July 21, 2020, from https://www.nytimes.com/2020/06/13/health/school-learning-online-education.html
2. Reckmeyer, M. (2020, April 17). Focus on Student Engagement for Better Academic Outcomes. Retrieved July 21, 2020, from https://www.gallup.com/education/267521/focus-student-engagement-better-academic-outcomes.aspx
3. Gallup, I. (2019, May 24). Positive Relationships Between Student Engagement and Hope and Student Behavior. Retrieved July 21, 2020, from https://www.gallup.com/education/257732/positive-relationships-student-engagement-hope-student-behavior.aspx
4. DeWitt, P. (2020, July 04). 6 Reasons Students Aren't Showing Up for Virtual Learning. Retrieved July 21, 2020, from https://blogs.edweek.org/edweek/finding_common_ground/2020/04/6_reasons_students_arent_showing_up_for_virtual_learning.html

While some of these challenges are outside a teacher's control, they are informative and give key insight into the struggles students are facing in these unprecedented circumstances. Districts currently developing lesson plans and teaching strategies would do well to keep these pain points in mind and be empathetic to the hardships students and their families are enduring.

Fostering Social-Emotional Learning

When it comes to STEM (science, technology, engineering and mathematics) education in particular, it is sometimes easy to focus primarily on helping students develop technical abilities. Because these subjects require a baseline knowledge that builds on itself as children learn more advanced applications, often an educator's primary concern revolves around skill checks and competency benchmarks.

While these are undoubtedly important, so too is the ability to collaborate with others and make empathetic decisions. Skills like these are the result of social-emotional learning (SEL). According to the Collaborative for Academic, Social, and Emotional Learning (CASEL), SEL "is the process through which children and adults understand and manage emotions, set and achieve positive goals, feel and show empathy for others, establish and maintain positive relationships, and make responsible decisions."[5]

Grounded in the power of supportive relationships that students develop with their peers and instructors, SEL programming challenges instructors to develop classroom communities where children feel both safe and a part of a greater team. Beyond the positive moral arguments for such an approach, neuroscience research has shown that emotion and cognition are connected and that for people to understand and contextualize academic concepts, expert instruction is not enough. Instead, according to a report by the National Education Association, school climate, a sense of belonging with peers, positive relationships with educators and constructive feedback are factors that determine positive learning outcomes.[6]

Though teachers have developed strategies to cultivate collaboration in their physical classrooms, when transitioning to an online learning environment, these same approaches are not always effective. In an article for Edutopia, Leah Henry, a high school educator and education consultant, discusses a series of actions that can help.[7]

Two students pose with the glowing flowers they created with Invention Project® K-6.

5. CASEL. What is SEL? Retrieved July 21, 2020, from https://casel.org/what-is-sel/
6. National Education Association. Backgrounder: The Importance Of Social Emotional Learning For All Students Across All Grades. Retrieved July 21, 2020, from https://www.nea.org/assets/docs/Social%20and%20Emotional%20Learning%20Response_Bkgdr%20v3.pdf
7. Henry, L. (2020, May 01). Fostering a Strong Community in a Virtual Classroom. Retrieved July 21, 2020, from https://www.edutopia.org/article/fostering-strong-community-virtual-classroom

Tips for Fostering a Strong Online Learning Community

Create community agreements – Just like in a physical classroom, having clear expectations for how children should behave in an online setting is crucial. For example, a community agreement could include rules like staying on mute while another student is talking, and not having other internet tabs open that could cause distractions. Mutually understood guidelines help children develop trust in each other and establish a social compact to facilitate positive learning outcomes.

Establish trusting relationships – For successful SEL, students must feel they can trust both their instructor and their fellow students. For this to occur, educators should make a daily practice of reaching out to each student individually, to ensure they are doing well. To further support strong student relationships, Henry also suggests that teachers create a class slide deck using Google Slides, where students can post fun facts about themselves.

Emphasize shared responsibility – In any classroom – and especially in virtual classrooms – maintaining a degree of accountability can be just as difficult as it is crucial. Because students each have their own unique set of obstacles to overcome in their home environment, introducing basic time and stress management skills can help them apply useful techniques to their own situation. To help keep everyone on track, educators can refer their class to a community agreement whenever they are unsure of their responsibilities as students.[8]

As COVID-19 introduces new levels of uncertainty into the school year, educators must demonstrate a sense of calm and understanding. Because the symptoms of anxiety can vary widely, from headaches and irritability to insomnia and tantrums, teachers must not only look after their own mental health but also watch out for any unusual behavior in their class and regularly check in on students' wellbeing.

In an article published by the Child Mind Institute, Dr. Jerry Bubrick explains that because young children especially can have a hard time articulating their emotions, using a "feelings chart" they can point to can help educators identify the moods of their students.

An example of a feelings chart, which can help students express their emotions.

A Hybrid Learning Solution

With the logistics of the 2020-2021 school year still very much up in the air, increasingly, school districts nationwide have begun to plan for what's being called "blended" or "hybrid" learning – a combination of both in-classroom and remote learning. A recent Microsoft survey of about 500 K-12 schools across the country supports this sentiment and found that 61% expect to begin the year in a hybrid environment.[9]

After hosting numerous focus groups and asking educators what type of programming would be most useful for this upcoming school year, our team of education experts at the National Inventors Hall of Fame® developed Invention Project® K-6, an engaging, hybrid solution designed to ensure students thrive in in-school, at-home and blended learning environments.

Aligning to State, Common Core State Standards and Next Generation Science Standards, Invention Project® K-6 not only embraces SEL but also sparks imagination through hands-on, open-ended exploration of STEAM (science, technology, engineering, arts and mathematics) concepts.

To learn more about this exciting new program, we invite you to visit our website at invent.org/educators/invention-project-K-6

"The activities and the skills that students learn at Invention Project® really transfer to the outside world. They're encouraged to come up with ideas, brainstorm, hypothesize and make mistakes – it's all part of the learning process!"

– Tania G., Commons Elementary School

8. Ibid
9. Newcomb, T. (2020, July 06). Schools Tell Ed Tech Leader They Expect Lots More Blended, Hybrid Learning in the Fall. What This Means for Teachers and Students. Retrieved July 21, 2020, from https://www.the74million.org/article/schools-tell-ed-tech-leader-they-expect-lots-more-blended-hybrid-learning-in-the-fall-what-this-means-for-teachers-and-students/