



2020 TECH ENABLERS

# Driving K-12 Innovation

**COSN**

LEADING EDUCATION INNOVATION

# CHALLENGE

Technology is an essential element of learning, yet the use and application of it is inequitable.

# VISION

CoSN is a community of visionary technology leaders empowering every learner to achieve their unique potential in a changing world.

# MISSION

CoSN provides current and aspiring education technology leaders for PreK–12 with the community, knowledge, and professional development they need to create and grow engaging learning environments.



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LEADING EDUCATION INNOVATION

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# Welcome!



Dear Colleagues

I hope this note finds you safe and well. This publication is the final report of the 2020 Driving K-12 Innovation cycle and focuses on Tech Enablers—tools that help schools and districts overcome Hurdles and take advantage of Accelerators. The two topics highlighted in this report, Digital Collaboration Platforms and Tools for Privacy and Safety Online, were important for K-12 innovation when they were selected by the Advisory Board late last year, and are all the more critical now as we continue to adapt in the face of COVID-19. In this publication, we have chosen to neither overlook the global pandemic nor center discussion on it, hoping instead to provide information and suggestions for leading change during and beyond this current moment in education.

For edtech guidance around COVID-19 specifically, I invite you to visit CoSN's [COVID-19 resource page](#).

Sincerely,

A handwritten signature in black ink that reads "Keith Krueger".

Keith R. Krueger,  
Chief Executive Officer

“ INFORMATION  
AND SUGGESTIONS  
FOR LEADING  
CHANGE DURING  
AND BEYOND  
THIS CURRENT  
MOMENT ”





# Introduction

“

TECHNOLOGY  
ITSELF IS NOT THE  
TRANSFORMER OF  
EDUCATION.”

**T**echnology can be a transformative tool for educators, helping to overcome Hurdles (obstacles) and take advantage of Accelerators (mega-trends). Tech Enablers support new pathways for teaching and learning and enable adaptation in the face of crises like the COVID-19 pandemic. Yet technology itself is not the transformer of education. To help educators pilot the complex landscape of K-12 education and technology, CoSN’s Driving K-12 Innovation initiative convenes an Advisory Board of approximately 100 educational leaders, researchers, technologists, and changemakers to identify the most important Hurdles, Accelerators, and Tech Enablers for advancing K-12 innovation in 2020. This report discusses the Top 5 Tech Enablers and provides a deep-dive into two topics—Digital Collaboration Platforms and Tools for Privacy and Safety Online. It also illuminates some of the connections between Hurdles, Accelerators, and Tech Enablers.





# Top 5 Tech Enablers

*Top 5 most important Tech Enablers for schools leverage in 2020 in order to surmount Hurdles and embrace Accelerators.*

## 1 Digital Collaboration Platforms\*

Digital spaces and tools that enable local and global collaboration.

## 2 Tools for Privacy & Safety Online\*

Tools, resources, and platforms that help to ensure the privacy and safety of learners accessing online technologies.

## 3 Analytics and Adaptive Technologies†

These are digital technologies that collect and use data related to teaching and learning. Analytics refers to the process of analyzing data collected about student learning and the opportunity to leverage data to inform instructional decision making. Adaptive technologies are tools that adapt to the student based on their interactions with the technology. These adaptations could be in the form of suggesting next steps, providing remediation, controlling pacing, or providing feedback based on analysis of the student's performance.

## 4 Cloud Infrastructure

A virtual infrastructure that is delivered or accessed via a network or the Internet, enabling IT services to move away from physically being present in a school.

## 5 Mobile Devices

Portable, wireless-Internet enabled tools that can be easily used in the moment in a wide range of contexts, and enable knowledge consumption/creation anytime, anywhere.

*\* Featured in this publication*

*† Featured in 2019 publication.*

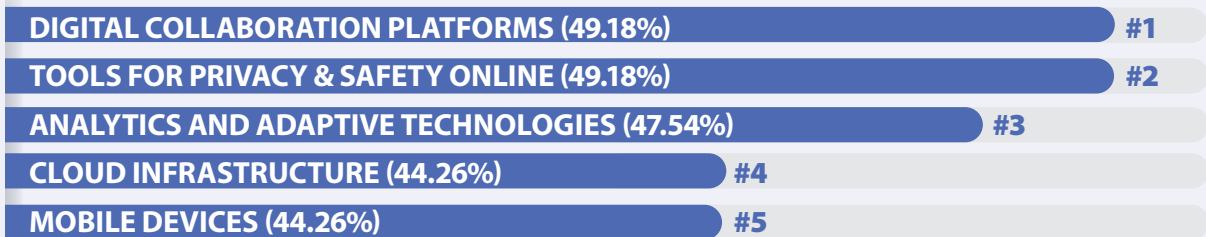




# Exploring Tech Enablers...

## ...BY IMPORTANCE

Top 5 most important Tech Enablers for schools leverage in 2020 in order to surmount Hurdles and embrace Accelerators (61 respondents):



## ...BY IMMEDIACY

Top 5 Tech Enablers in order of the immediacy of its adoption at scale by schools worldwide, as ranked by the advisory board (Scores reflect the average score out of 5, 1 being the most immediate adoption; 5 being the furthest away from adoption; 61 respondents):

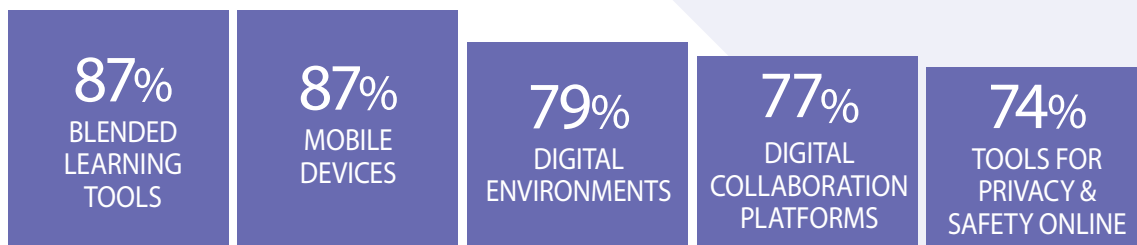
(LOWER NUMBERS ARE MORE IMMEDIATE)

1.39	MOBILE DEVICES
1.61	DIGITAL COLLABORATION PLATFORMS
1.82	TOOLS FOR PRIVACY & SAFETY ONLINE
1.90	CLOUD INFRASTRUCTURE
2.57	ANALYTICS + ADAPTIVE TECHNOLOGIES



## ...BY NUMBER

Top 5 Tech Enablers currently experienced by the advisory board members who are working in a school, district, or a K-12 organization focused on teaching and learning (39 respondents):







# Applying Tech Enablers

## LEARNING CONTINUITY & TRANSFORMATION DURING A PANDEMIC

The Driving K-12 Innovation initiative seeks to support K-12 innovation by illuminating major influences conceptualized as Hurdles (barriers), Accelerators (mega-trends), and Tech Enablers (tools). Applying these three lenses can help educators see pathways for adaptation and innovation in a variety of contexts and situations. The COVID-19 pandemic is one state of the world that requires educators to pivot and scale solutions more rapidly. Furthermore, educators are challenged to consider “How do we emerge from COVID-19 impacts with an education system that is responsive, adaptable, contributory, community-linked and future-focussed?”—a guiding question posed by the Learning Futures Network.<sup>1</sup>

The tech enablers highlighted in this report—Digital Collaboration Platforms and Tools for Privacy and Safety Online—are particularly relevant to the current moment. With an estimated 91.3% of students around the globe out of school in April,<sup>2</sup> these Tech Enablers and others are supporting resilience in the new remote education modalities. “These Enablers have also begun to prompt thinking about new ways of working, reimagining the connections between and across schools and sectors” (*Kim Flintoff, Curtin University, Australia*). Many of the examples in this report describe how educators are innovating and leveraging technology for learning continuity during the COVID-19 pandemic.

# Spotlight: Digital & Online Tools

Online tools are a major enabler of learning and education innovation globally. They can connect learners, educators, and communities across time and space, expanding the classroom and opening unique opportunities for learning. The 2020 Driving K-12 Innovation Advisory Board identified Digital Collaboration Platforms and Tools for Privacy & Safety Online as two of the Top 5 Tech Enablers for schools to leverage in 2020 in order to overcome Hurdles and take advantage of Accelerators.

## Digital Collaboration Platforms

Digital Collaboration Platforms defined: Digital spaces and tools that enable local and global collaboration.



### Exploring the Opportunity.

"Rather than using technology in isolated ways, I believe the more technology can facilitate collaboration the more transformative technology will be to the education process." (Holly Doe, CETL, Bedford School)

District, New Hampshire, U.S.)<sup>3</sup>

Digital Collaboration Platforms are a powerful tool for teaching, learning, and education practice. These tools can enable learning experiences, help students develop digital and career-relevant skills, and support professional development.

Digital Collaboration Platforms have become increasingly prevalent in education in recent years and the current global COVID-19 pandemic has accelerated their use. In India, educators and governments are leverag-

EXAMPLE TOOLS MENTIONED BY THE ADVISORY BOARD INCLUDE GOOGLE HANGOUT, ZOOM, PADLET, FLIPGRID, AND VOICETHREAD.\*

\*These resources list additional tools.<sup>8</sup> Note: CoSN is vendor-neutral and does not endorse specific products, services or solutions. Please follow the technology, data, and privacy policies and laws for your school, district, and region.





IT ALLOWS ACCESS TO RESOURCES ANY TIME ANY WHERE AND STRENGTHENS RELATIONSHIP BUILDING BETWEEN EDUCATORS AND STUDENTS.”

—Beverly Knox-Pipes, Ed.D., Nova Southeastern University & Consultant, BKP Solutions, Michigan, U.S.

ing digital collaboration tools—such as WhatsApp, online course platforms, mobile apps such as Unnayan-Mera Mobile Mera Vidyalaya—and one-way communications technology like radio and television to connect with students and support learning during the pandemic.<sup>4</sup> The United Nations Educational, Scientific and Cultural Organization’s (UNESCO) COVID-19 Education Response notes dozens of distance learning solutions, many of which can also be considered to be collaboration spaces.<sup>5</sup> The United Nations Children’s Fund’s (UNICEF) Learning Passport—created through partnerships with Microsoft and the University of Cambridge—enables large-scale, country-specific digital curriculum and educator resources. “Countries with digital curriculum

can now facilitate remote learning for children and youth who have an internet connection and access to a device such as a mobile phone, tablet, laptop or computer at home.”<sup>6</sup> This tool is already being used in Kosovo, Timor-Leste, and Ukraine.<sup>7</sup>

**Enabling Learning Experiences.**

“Digital Collaboration Platforms allow for an interdisciplinary approach to content, multi-grade level collaboration and mentoring, as well as a safe learning environment to prepare students for college and careers” (Barbara Haeffner, Meriden Public Schools, Connecticut, U.S.).

These tools support a broader range of learning opportunities by enabling collaboration across time and

space and facilitating access to a wider range of data and resources. They can be used to foster local human connection, bridge silos and classroom walls, and combat feelings of isolation. “It allows access to resources any time any where and strengthens relationship building between educators and students” (Beverly Knox-Pipes, Ed.D., Nova Southeastern University & Consultant, BKP Solutions, Michigan, U.S.).

Digital Collaboration Platforms enable synchronous and asynchronous group work and can minimize or alter the logistical challenges of collaboration. Leveraging these tools, educators and students can fundamentally change the way they co-create—moving from parallel individual work with occasional touch points to simultaneous collaboration and ongoing feedback. For example, Meridian Public Schools in Connecticut, U.S. uses Google Apps to support individual and small group work for elementary students. “When the small group of students is completing a response the teacher is able to take a quick review of the student work, provide feedback and the students at their seats are able to continue without waiting. Students are very excited to receive this timely feedback and are eager to improve their work” (Barbara Haeffner, Meriden Public Schools, Connecticut, U.S.).

These online tools also enable global collaboration, allowing students to work with people beyond their class or geographic area. For example, students from St. Vincent Ferrer Catholic School in the United States and the Roosevelt School in Peru worked together using Skype and Zoom. “The students at both schools collaborated on how to create a philanthropy using the Design Thinking method. Their philanthropic efforts inspired students in our design thinking class to take ownership of their own learning and find their passion. They entered the Philanthropy Tank<sup>9</sup> contest in our county and were awarded \$13,500 as finalists to start a Design Thinking program at Hope Rural school, an elementary school for migrant children” (Lisa Gustinelli, St. Vincent Ferrer Catholic School, Florida, U.S.).

# DIGITAL COLLABORATION PLATFORMS ALSO PROVIDE POWERFUL OPPORTUNITIES FOR EDUCATORS TO CONNECT WITH EACH OTHER.

Digital Collaboration Platforms can foster student ownership of their work and their digital skill development. “As the World of Work continues to evolve, the ability to collaborate in digital spaces is going to become a vital skill for many careers. Students not only need to learn the mechanics of functioning in a digital collaboration space, but also the etiquette/netiquette of doing so” (*Susan Moore, Meriden Public Schools, Connecticut, U.S.*). Though students may frequently use social media and digital technology on their own, they still need opportunities to learn how to collaborate in digital spaces.

## Supporting Innovation + Professional Development.

Digital Collaboration Platforms also provide powerful opportunities for educators to connect with each other and with partners in industry and the community. For example, the state of Western Australia leveraged its iThink platform—an online community for public sector workers to share ideas for improvement and innovation—to provide a collaborative space for citizens to co-design responses to

challenges presented by the COVID-19 situation. “What this prompted was a response from educators in the Learning Futures Network to develop an approach to learning that brings student voice, imagination, creativity and design-thinking capabilities to assist the state’s efforts in responding to the impacts and recovery from COVID-19 across the state...Students are positioned as valuable, responsible contributing citizens while still engaged in rich curriculum-linked learning experiences” (*Kim Flintoff, Curtin University, Australia*). This effort heavily utilizes Digital Collaboration Platforms and digital communication tools.<sup>10</sup>

Digital Collaboration Platforms also

enable professional development and professional learning communities, bridging organizational, temporal, and physical divisions. For example, at the heart of CoSN’s Driving K-12 Innovation initiative<sup>11</sup> is a global advisory board of educators, technologists, and industry partners. The project leverages a digital collaboration platform for asynchronous discussion, online tools for voting and process





management, and, occasionally synchronous communication platforms for conversation and connection. The resulting publications, like this one, are also created using these tools.



### **Illuminating the Complications**

While Digital Collaboration Platforms offer major opportunities for education, they are not without their difficulties. Privacy and safety, educator knowledge, and issues of access and equity complicate the use of these tools.

Innovation Hurdles & Accelerators report<sup>12</sup>. Tools for Privacy and Safety Online, a Top 5 Tech Enabler for 2020, is discussed later in this Tech Enablers publication.

**Professional Development.** “There is definitely a learning curve anytime school districts adopt technology that will be used in classrooms. Professional development needs to be thoughtfully planned and executed to ensure that the teachers have the skills and strategies to use the software effectively with students” (*Eileen Belastock, CETL, Mount Greylock Regional School*

resources.<sup>13</sup> For example, digital learning organizations are connecting students, educators, and learning resources in rural districts in Vermont and Colorado, U.S. “Its potential as a solution to current educational challenges in rural areas, which are home to a quarter of all U.S. primary and secondary students, continues to emerge.”<sup>14</sup>

However, Digital Equity—a Top 5 Hurdle for 2020—remains a major challenge for leveraging Digital Collaboration Platforms.<sup>15</sup> Digital Equity encompasses equitable access



**THERE IS DEFINITELY A LEARNING CURVE ANYTIME SCHOOL DISTRICTS ADOPT TECHNOLOGY.”**

— *Eileen Belastock, CETL, Mount Greylock Regional School District, Massachusetts, U.S.*

**Privacy & Safety.** Privacy and safety in Digital Collaboration Platforms is imperative. Schools are challenged to protect students and student data in ever-evolving digital and online places and to comply with a range of district and governmental policies and laws.

The Advisory Board selected Data Privacy as one of the Top 5 Hurdles that schools and districts need to address in order to pave the way for innovation and extraordinary student outcomes. The expert panel also identified Data-Driven Practices as a key Accelerator for K-12 innovation. Both of these topics are discussed in more detail in the 2020 Driving K-12

*District, Massachusetts, U.S.).*

Professional development is essential. Educators must be provided with opportunities to learn how to leverage the technology for teaching and learning as well as training around the challenges and requirements for privacy, safety, and equity in Digital Collaboration Platforms. As the current COVID-19 pandemic necessitates a rapid transition to technology-mediated and online education modalities, educator competency with digital tools and professional development is even more essential.

**Access & Equity.** Digital Collaboration Platforms can facilitate access to education, collaborators, and online

to and quality of digital technologies, Internet and connectivity, knowledge and digital literacy skills, effective technology use, support, and digital content.<sup>16</sup> In Kenya, the government is partnering with Google Loon to provide connectivity to rural areas using large high-altitude balloons, increasing access to online education tools and materials.<sup>17</sup>

Furthermore, technology solutions often assume uniformity and a single ecosystem of tools that does not reflect reality for many stakeholders and can exacerbate inequalities. Many students and educators face barriers related to proprietary features, lack of interoperability, the terms of enter-



prise technology agreements, and applications with demanding hardware and connectivity requirements.

The COVID-19 global pandemic has major implications for equity and access in and beyond education and Digital Collaboration Platforms.<sup>18</sup> UNESCO warns that the current situation and related school closures are likely to disproportionately impact girls around the world, particularly in the global south. They recommend, among other steps, that governments attend to the gender digital divide. "In contexts where digital solutions to distance learning and Internet are accessible, ensure that girls are trained with the necessary digital skills, including the knowledge and skills they need to stay safe online."<sup>19</sup>

In addition to Digital Equity, it can be challenging to meet the diverse needs of learners when using Digital Collaboration Platforms and provide

instruction that is equitable, especially when in-person education is not an option. In the current pandemic, some educators are focusing on providing parents with the tools to teach at home and adapt learning materials to meet their student's needs.<sup>20</sup> Additionally, "not all students are able to learn digitally, materials may not be accessible, and students are (can) experiencing digital fatigue. Recognizing the needs of each student and providing supports, modifications, and other accommodations are essential" (*Jenna Linskens, Ithaca College, New York, U.S.*). Low-tech solutions, like phone calls, can be valuable ways to connect educators, parents, and students.<sup>21</sup> Access to communications technologies, such as the Internet, phones, radio, and television remains unequal in areas around the globe, especially Africa and Southern Asia.<sup>22</sup> "Emergency measures which rely sole-

ly on technology are unlikely to offer an adequate response for learning continuity for children...who are most left behind by current policies."<sup>23</sup>



### **Leveraging the Technology**

"Digital Collaboration Platforms promote collaborative learning, multi- and interdisciplinary learning, and the world as a habitual learning environment, which prepares students for the future of work and to be digital lifelong learners" (*Susan Moore, Meriden Public Schools, Connecticut, U.S.*).

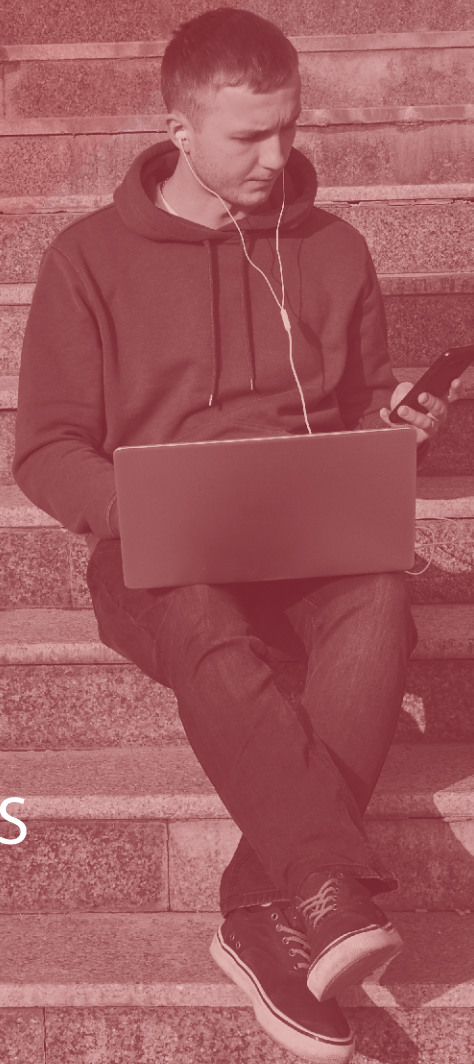
To leverage this Tech Enabler in order to surmount Hurdles and embrace Accelerators, educators and school systems must prioritize safety and privacy, develop stakeholder competency, and address issues of equity and access.

**Prioritize Safety & Privacy.** It is the responsibility of schools, educators, and technology users to under-

“

RECOGNIZING THE NEEDS OF EACH STUDENT AND PROVIDING SUPPORTS, MODIFICATIONS, AND OTHER ACCOMMODATIONS ARE ESSENTIAL.”

—Jenna Linskens, Ithaca College, New York, U.S.







## EDUCATORS, STAFF, STUDENTS, AND PARENTS NEED TO KNOW HOW TO EFFECTIVELY ENGAGE WITH THESE TECHNOLOGIES AND HOW TO ADDRESS ISSUES THAT ARISE WITH THEIR USE.

stand the privacy and safety issues associated with Digital Collaboration Platforms and comply with relevant policies and laws. Though many Digital Collaboration Platforms have Tools for Privacy and Safety Online (a 2020 Top 5 Tech Enabler discussed below), it is imperative to understand the possibilities and limitations of using these tools to protect privacy.

CoSN's [Protecting Privacy in Connected Learning](#) initiative and [Edtech Guidance in the Age of COVID-19](#) resources include recommendations for addressing privacy and safety concerns and leveraging digital tools.<sup>24</sup> The Driving K-12 Innovation: 2020 Hurdles + Accelerators publication also discusses challenges, opportunities, and strategies related

to Data Privacy. Several organizations are also offering webinars related to this topic and the COVID-19 crisis.<sup>25</sup>

**Develop Competency.** Professional development and stakeholder education is key to the effective use of Digital Collaboration Platforms for education. Educators, staff, students, and parents need to know how to effectively engage with these technologies and how to address issues that arise with their use. Teachers need training and support to successfully implement collaborative and online tools for student learning and cultivate student competency in these digital spaces. Professional communities, many of which leverage Digital Collaboration Platforms themselves, can be a

powerful resource for educators in developing their competency with digital learning practices and tools. There are also currently many online resources available related to digital learning and COVID-19.

**Address Equity & Access.** In utilizing Digital Collaboration Platforms, it is imperative to be attentive to issues of equity, access, and accessibility. In many contexts, educators are faced with both ethical and legal obligations to ensure access. CoSN and other organizations offer guidance related to Digital Equity and broadband connectivity<sup>26</sup>; supporting students with Internet access challenges<sup>27</sup>; digital accessibility<sup>28</sup>; and supporting diverse learner needs in digital environments<sup>29</sup>



## Tools for Privacy & Safety Online

Tools for Privacy & Safety Online defined: Tools, resources, and platforms that help to ensure the privacy and safety of learners accessing online technologies.



### Exploring the Opportunity.

"I think there is a distinction between Privacy and Safety. Safety is incumbent upon educating students and employees around issues of phishing as well as issues around safe use of social media... Student privacy really surrounds protecting Personally Identifiable Information (PII) and the laws that govern it." (George Perreault, M.Ed., ClassLink, Florida, U.S.).

When appropriately used, Tools for Privacy and Safety Online can help school systems, educators, and technology users protect themselves in digital spaces. "While cybersecurity protects devices and networks from harm by third parties, Online Safety protects the people using them from harm by the devices and networks (and therefore third parties) through awareness, education, information and technology."<sup>30</sup> These tools include privacy settings in apps and online platforms; administrative and parental controls; filters; resources that educate and support people; and other tools and technologies.

**Privacy.** "In today's environment of what seems to be weekly data breaches and Ransomware attacks

“  
WE NEED  
TO ALLOW  
TEACHERS  
TO USE  
TOOLS AND  
APPS, BUT  
KEEP DATA  
SAFE TOO.”

— Peter Drescher, M.A., Essex-Westford School District, Vermont, U.S.

against school districts, ensuring tools, policies and procedures that can help to protect students and staff is critically important." (Joe Catania III, Washingtonville Central School District, Washingtonville, New York, U.S.).

Effective Tools for Privacy and Safety Online enable digital collaboration, learning, and innovation. Appropriate use of these tools depends in large part on school systems and educators developing and implementing effec-

tive policies and practices that comply with the relevant data privacy laws.<sup>31</sup>

Professional organizations and communities around data protection in education can be a powerful way to foster data privacy and practices. "In Vermont, we have joined the Student Data Privacy Consortium and it has provided a way to build some community on this hot topic. It is a challenge. We need to allow teachers to use tools and apps, but keep data safe too... We are trying slowly to change the culture and make good decisions that will have a positive impact on all of our consortium members." (Peter Drescher, M.A., Essex-Westford School District, Vermont, U.S.).

**Student Safety.** Tools for Privacy and Safety Online can help protect students from safety threats online as well as provide them with support when they do experience cyberbullying, explicit content, privacy violations, and other harmful occurrences. Anonymous reporting tools can provide safe ways for educators and students to report, seek help, and perhaps prevent online safety incidents. One such tool, Whisper, has been made available to 35,000 primary and secondary students in the United Kingdom during the COVID-19 crisis.<sup>32</sup>

**Stakeholder Partnerships.** "Through Digital Citizenship efforts at schools across the country, students are more aware of the expectations, risks and dangers of being a digital citizen in an online environment.



Despite that, the risks are becoming more sophisticated which makes it difficult for students to protect themselves. Tools are needed to support school privacy and safety initiatives in order to help protect student.” (Teshon Christie, CETL, Kent School District, Washington, U.S.).

Stakeholder understanding and investment in privacy and safety online is essential. For example, a 2018 study in the United States suggests that teens with higher parent involvement generally have higher levels of digital etiquette and safety.<sup>33</sup> Educators, students, parents, community members, and industry partners must actively prioritize student safety and privacy. “The overall goal is really about keeping kids safe. If we can bring to bear the power of this activity and help vendors understand why we are doing this AND get vendors to pursue these privacy agreements on their own, we could really have a viable and working relationship between the schools and the vendor.” (Peter Drescher, M.A., Essex-Westford School District, Vermont, U.S.).



#### **illuminating the Complications.**

“The emotional and physical safety of students has always been of utmost importance in schools and now there is almost equal importance to the safety of students online since more and more school hours are being spent in an online situation.” (Liz Lee, ISTE, Washington D.C., U.S.)

The effective use of Tools for Privacy and Safety Online is complicated by a need for effective policies and resources, educating stakeholders, and the challenge of balancing safety and privacy.

**Policies and Resources.** “The complication around privacy is that technology enables things to happen much, much faster than our ability to have wise policies.” (Keith Krueger, CoSN, Washington D.C., U.S.).

In order to safeguard people and data online, school systems need to have effective policies—yet the technology landscape is constantly evolving. Districts also need the resources to implement those policies



“THE COMPLICATION AROUND PRIVACY IS THAT TECHNOLOGY ENABLES THINGS TO HAPPEN MUCH, MUCH FASTER THAN OUR ABILITY TO HAVE WISE POLICIES.”

—Keith Krueger, CoSN, Washington D.C., U.S.

for an often extensive list of potential tools and services. “For my small rural district, our hurdles include resources, time and manpower. Through the LearnPlatform initiative, we have found over 500 apps being used in the district. As the tech director, it is overwhelming to evaluate, have conversations with teachers and determine the value and safety of the tools.” (Eileen Belastock, CETL, Mount Greylock Regional School District, Massachusetts, U.S.).

The COVID-19 pandemic further

complicates the development and enactment of effective policies and practices around online privacy and safety. For example, in the rush to transition to online learning due to school closures, many schools did not adequately vet technologies for privacy and security or train educators in their use. As a result, many educators experienced problems such as video conference intruders. “The COVID-19 crisis does not mean cutting corners on privacy. Just the opposite. Give yourself and your parent community

the comfort you both need to know that the tools you're using are appropriate for your students and compliant with the laws."<sup>34</sup> Educators are challenged to connect with students remotely in ways that are compliant and protect students, using vetted and approved Tools for Privacy and Safety Online.

In the face of school closures and the ongoing pandemic, there are limited options for teaching that are not

mediated by technology. Yet policies and resources are often inadequate to effectively vet and implement technology with this scope, complexity, and urgency.

**Understanding & Competency.**

"With such a strong emphasis on privacy and safety, schools will need to balance innovation with privacy and remain transparent with parents, students and community." (Holly Doe, CETL, Bedford School

District, New Hampshire, U.S.).

Not all Tools for Privacy and Safety Online are trustworthy, sufficient, compliant, or appropriate for education settings.<sup>35</sup> Beyond technology vetting processes, online privacy and safety in education depends on the involvement of stakeholders—teachers, staff, school system leaders, students, parents, industry partners, and community members. Schools are challenged to build buy-in and educate these partners about privacy and safety concerns, tools, and behaviors. In many cases, "at the teacher level, we lack the knowledge and understanding on how they should proceed with websites and apps in order to insure student privacy and safety." (Anna Baldwin, M.Ed., Anderson School District Five, South Carolina, U.S.). Professional development can boost educator competence and equip them with tools and strategies for teaching students about online safety and privacy. "Not only is online privacy and safety important while at schools, we are educating our students on the importance of staying safe online beyond the walls of school and through adulthood." (Christine Schein, Colorado Department of Education, Colorado, U.S.).

**School Responsibility & Privacy vs. Safety.**

One challenge to effectively using Tools for Privacy and Safety Online is the sheer breadth of privacy and safety issues. Schools are faced with challenges ranging from hackers, data breaches, and unauthorized sharing of information, to cyberbullying, mental health crises, and abuse identification and response. The scale and scope of the challenges relevant to Tools for Privacy and Safety Online is enormous. To what extent should schools protect student privacy and safety online beyond the often permeable boundaries of school and education technology? Educators are challenged to define the scope of their legal and ethical obligations across diverse contexts and situations. Schools must also grapple with the balance between privacy and safety. For example, to what extent/should schools monitor student social media for signs of suicidal ideation or potential violence?



WE ARE EDUCATING OUR STUDENTS ON THE IMPORTANCE OF STAYING SAFE ONLINE BEYOND THE WALLS OF SCHOOL AND THROUGH ADULTHOOD."


—Christine Schein, Colorado Department of Education, Colorado, U.S.



# “THESE ISSUES ARE BIGGER THAN JUST SCHOOLS AND I BELIEVE COMMUNITIES ARE CALLING OUT FOR OUR GUIDANCE.”

—Karen Swift, James Nash High School, Australia



 **Leveraging the Technology**  
“These issues are bigger than just schools and I believe communities are calling out for our guidance.” (Karen Swift, James Nash High School, Australia).

To effectively leverage Tools for Privacy & Safety Online to overcome Hurdles and take advantage of Accelerators, educators should utilize communities and resources, craft relevant policies and processes, and build stakeholder understanding and capability.

**Leverage Communities & Resources.** Communities of practice and professional organizations can be powerful partners in addressing privacy and safety issues in education and leveraging technologies. The **Trusted Learning Environment** initiative<sup>36</sup> (TLE), led by CoSN, provides **guidance**,<sup>37</sup> community, and a seal to recognize school systems that meet data privacy standards. “Because technology moves so fast and policies are often behind (slow), having an ongoing working group—like the TLE cohort

group with practices—we can enable support to provide needed Tools for Privacy and Safety Online. An example to support this is the new CoSN **Cybersecurity Collaborative partnership**<sup>38</sup>—it provides tools and resources to collaborate and address issues ‘real-time.’” (Frankie Jackson, CETL, RTSBA, the Texas K-12 CTO Council/Independent Education Strategist, Texas, U.S.).

Other organizations around the world also provide community and resources. Childnet International works directly with children and stakeholders to foster a safer Internet. This organization develops **policy recommendations** and **resources**<sup>39</sup> for a range of age groups, around topics including **cyberbullying**.<sup>40</sup> **Common Sense Media** offers reviews of websites, apps, and other media, sortable by age. The European Commission’s **Better Internet for Kids**<sup>41</sup> website has **resources**<sup>42</sup> for privacy and safety online, including a guide with **information about some of the online platforms**

**that are most popular** with children in Europe.<sup>43</sup> The Polish Safer Internet portal offers educational materials,<sup>44</sup> as do **Safer Internet Centers around Europe**.<sup>45</sup> **DigCitCommit** provides resources and community around digital citizenship.<sup>46</sup> In the United States, the **iKeepSafe** program offers certification for digital products to demonstrate their data privacy compliance with relevant laws.<sup>47</sup> CoSN also offers resources around **cybersecurity**<sup>48</sup> and **privacy protection**.<sup>49</sup>

**Craft Policies and Processes.** “Districts should inquire as to whether industry standard third party audits have been conducted...They should also ask for documentation around what kind of encryption, internal or external penetration testing is performed and how much cyber insurance they carry” (George Perreault, M.Ed, ClassLink, Florida, U.S.).

Schools must also design and implement policies for privacy and safety in digital and online tools and learning spaces. Professional orga-

nizations and resources like those discussed above can help guide these efforts. Monetary and human resources are essential to policy implementation and the vetting of technologies and Tools for Privacy and Safety Online. Suggestions for overcoming the Hurdle of Data Privacy are discussed further in the [Driving K-12 Innovation: 2020 Hurdles + Accelerators](#) publication.<sup>50</sup>

**Build Understanding and Capability.** To protect privacy and safety online, and effectively leverage relevant technologies, schools must develop collective understanding of the issues and ways to address them. "In technology class, our school did an informal discussion with students about what apps and online websites they are using and what they are doing online...Students openly shared that they had accidentally connected with an adult stranger online as well as the cyberbullying they had experienced. The follow up was professional development for teachers and parents about Social Media being used by students" (*Lisa Gustinelli, St. Vincent Ferrer Catholic School, Florida, U.S.*).

**The Advisory Board also recommends that schools**

- ▶ integrate digital and online privacy and safety across the organization as a regular, ongoing priority for educators, staff, and students;
- ▶ teach responsible, proactive behaviors for digital and online privacy and safety;
- ▶ partner and build trust with vendors, parents, students, and other stakeholders;
- ▶ build the capacity of leaders and a culture that prioritizes privacy and safety; and
- ▶ prioritize equity, access, and accessibility.

## THINKING ABOUT K-12 INNOVATION IN TERMS OF HURDLES, ACCELERATORS, AND TECH ENABLERS CAN HELP MAKE SENSE OF A COMPLEX ECOSYSTEM OF CHALLENGES.

### Intersections

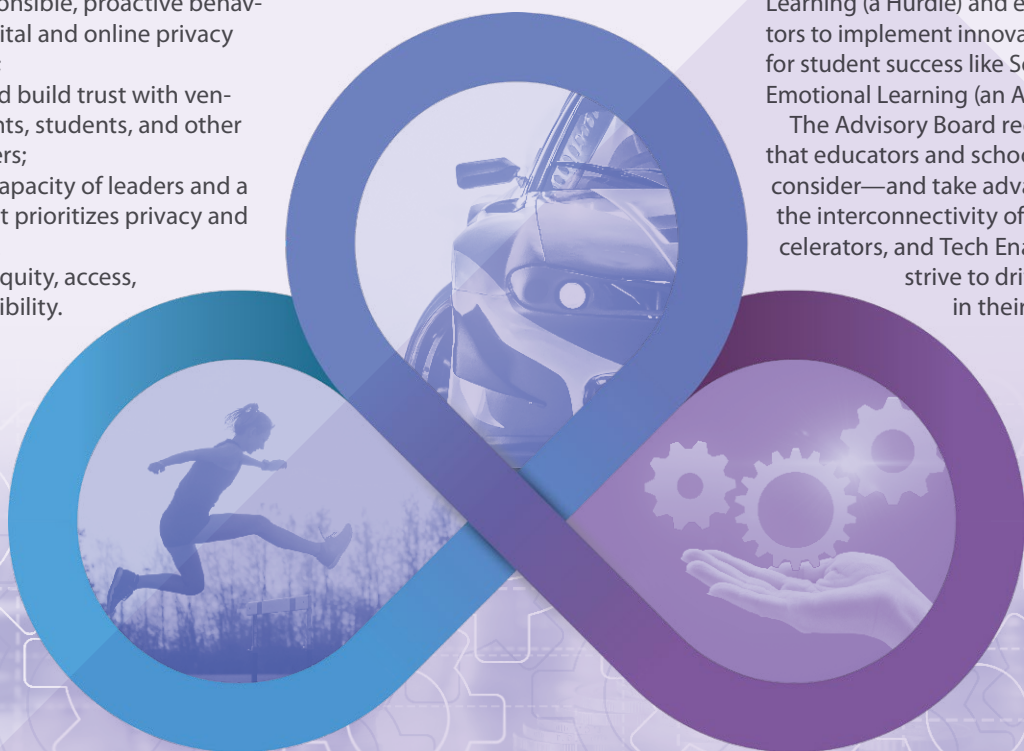
The two Tech Enablers featured in this publication—Digital Collaboration Platforms and Tools for Privacy and Safety Online—are deeply connected with each other. They also support other Tech Enablers and are tied to many Hurdles and Accelerators. Thinking about K-12 Innovation in terms of Hurdles, Accelerators, and Tech Enablers can help make sense of a complex ecosystem of challenges, opportunities, and tools. Separately, each lens is interesting; together, they're powerful.

Leveraging Digital Collaboration Platforms (a Tech Enabler) to Build the Human Capacity of Leaders (an Accelerator) can help schools overcome the challenges of Pedagogy vs. the Technology Gap (a Hurdle).

Personalization (an Accelerator) can catalyze the use of Analytics and Adaptive Technologies and other Tech Enablers to Scale and Sustain Innovation (a Hurdle).

Many Data-Driven Practices (an Accelerator) rely on Analytics and Adaptive Technologies, Cloud Infrastructure, and other Tech Enablers. Effective Data-Driven Practices necessitate addressing Data Privacy (a Hurdle) and, often, leveraging Tools for Privacy and Safety Online (a Tech Enabler). Addressing these topics together can help overcome the challenges presented by the Evolution of Teaching and Learning (a Hurdle) and enable educators to implement innovative practices for student success like Social and Emotional Learning (an Accelerator).

The Advisory Board recommends that educators and school systems consider—and take advantage of—the interconnectivity of Hurdles, Accelerators, and Tech Enablers as they strive to drive innovation in their contexts.





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# Appendix A: Methodology

To arrive at the Top 5 Tech Enablers for 2020, the Advisory Board navigated a three-stage process of selecting topics for consideration, discussion, and voting.

## Stage 1: Initial Survey

The Advisory Board completed a survey to select the Tech Enablers for subsequent discussion, focusing on the most important, impactful, and under-examined technologies. From this survey, CoSN narrowed down the original list of 25 Tech Enablers, carrying forward for discussion 17 topics and adding 3 new Tech Enablers recommended by the Advisory Board. Starting with this more focused list of topics created more time and space for deep, meaningful conversations. Three additional Tech Enablers—Workflow Automation Enablers, eSports, and Digital Collaboration Platforms—were added during the discussion phase.

## Stage 2: Discussion

Each of the selected topics was discussed by the Advisory Board in an online forum. To focus the conversation, this stage of the process was divided into two parts: Respond to Prompts and Deepen the Discussion. First, the Advisory Board considered a series of prompts related to the actions necessary to understand and leverage to the Tech Enablers.

**BUILD**—What, if anything, would you change about our current definition of this Tech Enabler?

**EXPAND**—What are some of the nuances that complicate the use of this Tech Enabler?

**STRATEGIZE**—How can we leverage this Tech Enabler to surmount specific Hurdles or take advantage of specific Accelerators? Propose a plan of action for how this tech enabler can support teaching and learning.

**ALIGN**—Which Hurdles and Accelerators align with this Tech Enabler?

Building on this foundation, the Advisory Board shifted their focus to responding to colleagues and deepening the discussion. Responses in this part of the discussion were free-form, with no set questions to answer. However, a few ideas provided an optional creative boost to jump start discussion.

**CONVERGE or DIVERGE**—In what ways does your experience resonate with or differ from your colleague’s post?

**ILLUSTRATE**—What related examples do you see in education or elsewhere?

**EXPAND**—What questions do you still feel need to be addressed or clarified?

## Stage 3: Final Survey

Inspired by this vibrant discussion, the Advisory Board completed a survey to select most important Tech Enablers for K-12 innovation in 2020. This final activity illuminated: the Tech Enablers that Advisory Board members are experiencing in their own K-12 environments (this suggests how many schools/districts are being impacted); how quickly each Tech Enabler is being adopted at scale by schools worldwide (the “immediacy of adoption” score); the Top 5 Tech Enablers for 2020; and brief justifications, examples, and/or recommendations for the top topics each individual selected.

## Online Appendices

The following materials can be found on the Driving K-12 Innovation website, <https://www.cosn.org/k12innovation>.

Full list of Tech Enablers with working definitions for each

Tech Enablers Initial Survey Questions

Tech Enablers Discussion Prompts

Tech Enablers Final Survey Questions



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