SNAPSHOT
2020

A review of K–12 online, blended, and digital learning

FEBRUARY 2020

digital learning
COLLABORATIVE

About this report

The 2020 Snapshot is the second annual report of the Digital Learning Collaborative (DLC).

From 2004 to 2016, the Evergreen Education Group published a series of annual *Keeping Pace* reports. The reports, which were sponsored by a range of organizations, including school districts, state agencies, non-profit organizations, and companies, provided reviews of practice and policy for the field of K–12 online, blended, and digital learning. Some of the reports included planning guides designed to help educators in the field with the establishment and growth of their digital programs.

In 2017 and 2018, Evergreen did not publish the annual report, as Evergreen and key partner organizations considered how to maintain the overall goal of *Keeping Pace*—to provide the foundational information that the field requires—while shifting to a new digital-first, financially sustainable model.

In 2020, the *Keeping Pace* reports have been re-imagined within the umbrella of the Digital Learning Collaborative and the Digital Learning Annual Conference.

DLC membership is made up of the same types of organizations as the earlier *Keeping Pace* sponsors: school districts, state agencies, non-profit organizations, companies, and a small number of foundations. The DLC website is growing and provides reports, blog posts from DLC members and guests, news items, and similar information.

The new Digital Learning Annual Conference (DLAC) was first held in April 2019. It is being held in February 2020, and will be in February for the next several years. We plan to release the annual Snapshot reports at DLAC.

We call this report the Snapshot for two reasons. First, we intend it to provide a snapshot of K–12 digital learning activity in the United States, using public schools as the primary focus. Second, it provides a glimpse into the far more extensive information available on the DLC website. Some of the text, graphics, and analysis are new to this report and will be made available on the website; parts of this report are executive summaries of full reports available on the website. The DLC website also contains additional school and district profiles, blog posts, podcasts, and other information.

We welcome your comments, suggestions, and questions! Please email us at info@evergreenedgroup.com.

Revision History
All DLC publications are living reports, and we welcome requests for changes to improve their accuracy. The following changes have been made to this report, after its initial release in February 2020:

March 2020 – Table 1, pg. 19, fourth column labeled "Non-instructional staff FTE" removed for clarity purposes.

About the Digital Learning Collaborative

The Digital Learning Collaborative (DLC) is a membership group dedicated to exploring, producing, and disseminating data, information, news, and best practices in K–12 digital learning.

Our current members include school districts, intermediate units, public agencies, non-profit organizations, and companies.

Collaborative activities are supported financially by annual membership fees. We accept foundations as members but do not seek nor accept foundation funding at levels higher than members.

The Evergreen Education Group manages the Collaborative. DLC members determine the topics that we explore, via monthly web meetings and individual discussions. Topics include the following:

- Best practices and strategies for success in a variety of online and blended learning settings (e.g., mainstream schools and classrooms, alternative education, online schools, credit recovery programs)

- Honest explorations and analysis of challenges and pitfalls that have plagued digital learning

- Implementation case studies exploring the varied settings discussed above

- Discussion of successful online content and technology platforms supporting digital learning

- Identification of professional development needs for teachers and strategies for success

- Policy issues including state funding and accountability systems, which benefit or hinder best practices in supporting students

- Annual reports documenting key issues in digital learning, including growth and trends.

DLC Core Principles

Members of the Digital Learning Collaborative believe the following:

Online, blended, and digital learning encompass a wide range of schools, instructional strategies and practices that may be implemented across a district, network of schools, single school, or individual classroom.

Existing schools and programs demonstrate that many of these instructional strategies and practices are helping K–12 schools and students improve educational opportunities and outcomes.

Online, blended, and digital learning encompass practices that may be implemented well or poorly. Therefore, the theoretical question "does online/blended/digital learning work" is nonsensical in the same way as asking "do traditional schools work?"

The technology used in online, blended, and digital learning always supports teachers and other professional adults who work with students in a variety of ways. There are no examples of successful, scalable educational programs in the United States that operate without teachers.

Although K–12 digital learning has a track record that extends over more than two decades, significant myths and misunderstandings are common. The DLC exists in part to counter these myths and replace them with data and accurate information.

Many different types of organizations have a valuable role to play in improving education. Digital tools, resources, and instruction are created and implemented by a wide variety of organizations that include individual schools, districts, regional public agencies, state agencies, private non-profit organizations, and for-profit companies.

Individual Collaborative members support these principles. Collaborative documents and resources build on these principles, but may not always reflect the views of individual DLC members.

Introduction

Online, blended, and digital learning in K–12 schools in the United States include an assortment of schools, programs, tools, and resources. These range from the fully online schools in which students receive their entire education, to the digital platforms and content that mainstream teachers are using to bolster instruction in their physical classrooms.

As digital learning (which we define to include online and blended learning, as well as classroom uses of digital tools and resources) grows, creating categories to help make sense of emerging and innovative uses of instructional technology becomes increasingly difficult.

In this report, we attempt to create such a categorization. We start with the understanding that schools, programs, and instruction using digital tools and resources can be characterized among a set of dimensions, as shown in Figure 1.

A range of applications, including online schools, hybrid programs, and the use of technology in traditional schools, can be characterized within each of the defining dimensions. All digital-related schools and programs exist somewhere on the continuum of being supplemental or full-time (from a student perspective); as operating at the level of a classroom, school, district, region, state, or country; and as being accessed from traditional schools, homes, or elsewhere. In addition, digital instruction tends to differ based on grade level and subject area.

FIGURE 1: **The Defining Dimensions of Online Programs**

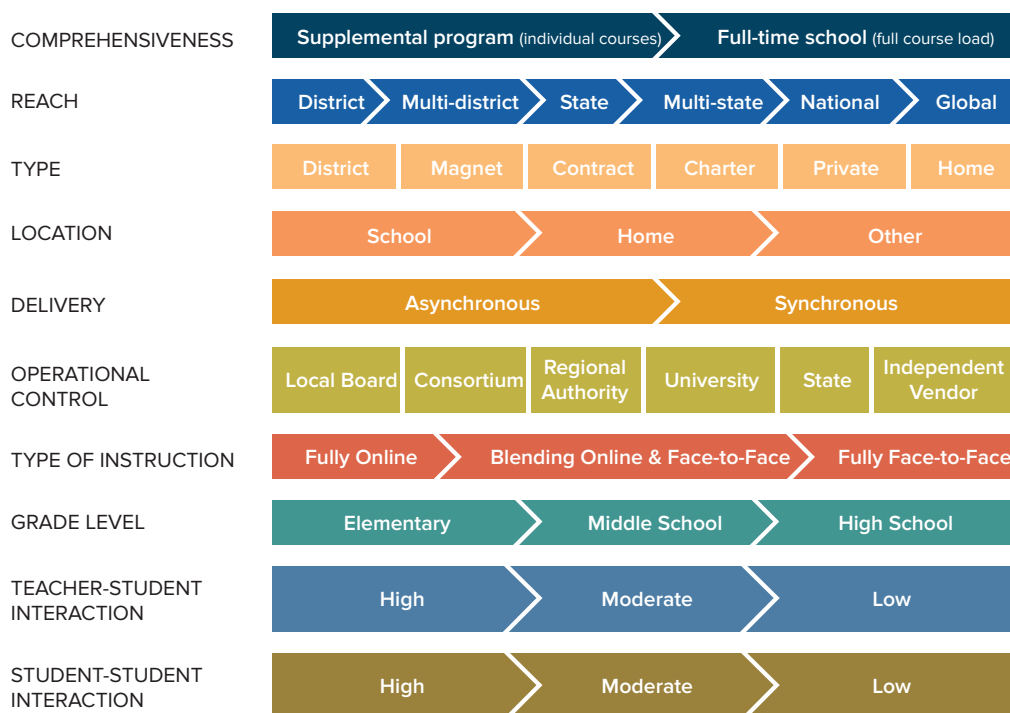|					
COMPREHENSIVENESS	Supplemental program (individual courses)		Full-time school (full course load)		
REACH	District	Multi-district	State	Multi-state	National	Global
TYPE	District	Magnet	Contract	Charter	Private	Home
LOCATION	School		Home		Other
DELIVERY	Asynchronous		Synchronous		
OPERATIONAL CONTROL	Local Board	Consortium	Regional Authority	University	State	Independent Vendor
TYPE OF INSTRUCTION	Fully Online	Blending Online & Face-to-Face		Fully Face-to-Face	
GRADE LEVEL	Elementary		Middle School		High School
TEACHER-STUDENT INTERACTION	High		Moderate		Low
STUDENT-STUDENT INTERACTION	High		Moderate		Low

Figure adapted from Gregg Vanourek, A Primer on Virtual Charter Schools: Mapping the Electronic Frontier, Issue Brief for National Association of Charter School Authorizers, August 2006.

These defining dimensions are useful as a starting point. In the next step, which makes up much of the rest of this report, we have created six categories of digital learning. They are:

- Online schools

- Hybrid schools
- Online courses with online teachers
- Online courses with onsite teachers
- Digital content
- Data and assessment

In the following pages we explore each of these categories. Each category has, at a minimum, a descriptive two-page spread, explaining the category including the extent to which a student's time is engaged, how the category relates to time and space constraints, and other key issues. Each category also includes two short profiles which explore a school, district, or program's use of digital learning in this category. The online schools and supplemental online courses with online teachers categories lend themselves to further analysis because of the relatively higher level of data and information that are available about them.

Any taxonomy is somewhat artificial and at best creates an approximation to help us understand the larger field. We recognize several constraints:

- Educators don't think in these categories and would likely see their own usage across multiple categories.

- The categories overlap; for example, online schools use data and assessment extensively. Traditional schools, however, often use data and assessment in the absence of online courses, which is why we put data and assessment in its own category.

- The same digital tools, resources, and providers are often used in different categories, further blurring the distinctions.

- Our focus on public schools means that we don't explicitly review private schools, or directly comment on the state agencies, non-profit organizations, and companies that are supporting public schools' shift to digital. We recognize that all schools using digital tools and resources are supported by outside entities in the public, private, and non-profit sectors, and plan to explore the larger digital learning system in future reports.

We recognize these limitations, but believe that the categories remain useful for increased understanding of the field.

We attempt to indirectly estimate the overall impact of the various categories on K–12 education by noting the "level of engagement" from a student's perspective and, where possible, provide some estimate of usage numbers. Both of these measures vary drastically between categories. At one end of the continuum, online schools serve a very small percentage of students (no more than 2% in any single state and less than 1% nationally), yet these are hugely impactful for individual students in that the online school provides the student's entire education. At the other end of the continuum, the percentage of students using digital content for instructional purposes in some form or fashion is approaching 100%—especially if we leave out the youngest grade levels—but the impact on each student is less clear. Videos, animations, and other digital materials certainly have capabilities that go beyond paper textbooks, and therefore hold promise for improving instruction, but impacts on student outcomes are unclear.

Any discussion of student impact or outcomes within digital learning must be based on the recognition that the use of digital tools and resources exists within the far larger world of K–12 quality and accountability.

The many years in which No Child Left Behind (NCLB) established the federal accountability framework under which states and schools operated created a focus on high stakes test scores and high school graduation rates.

The Every Student Succeeds Act made changes to NCLB, adding additional measures such that proficiency, growth, and high school graduation rate are the most common metrics, along with college and career readiness in some states. Many digital learning advocates argue for quality and accountability programs and measures, including tangential areas such as student and parent choice, and social and emotional learning, that educators of all stripes defend.

This report includes two sections that explore the interconnection between policy and practice. One looks at course choice policies and programs; the other at eLearning days. Each is made up of a two-page summary of a longer report that resides at the Digital Learning Collaborative website.

In fact, every section of this report has related web pages, reports, blog posts, and podcasts on the DLC site, and we hope you use this report as a gateway to the larger set of resources on the site.

We've been studying the K–12 online, blended, and digital learning field for two decades, but still find that understanding and conveying information in the most useful way possible remains a challenge. We invite you to engage with that information, and with us, at the DLC site and on social media.

Key terms

This page describes several key terms used by the Digital Learning Collaborative in presentations, on the DLC website, and within documents and reports like this one. We purposely call these key terms descriptions and characterizations instead of definitions, because the focus should be on the value and effectiveness of instructional practices, not on whether a certain practice fits a specific definition.

Online learning encompasses a wide range of educational activities, tools, and resources that are delivered via the Internet. These can be schools in which the large majority of curriculum is delivered online, and interaction between students and teachers, and between students, is mostly or entirely at a distance. Online learning can be the online component of specific activities in mainstream classrooms, such as students using instructional math software for an hour per week in a class that otherwise uses face-to-face teaching, group activities, and a range of similar approaches that are common in traditional schools.

Blended learning describes any combination of online learning and site-based, face-to-face education. Although the DLC believes that student agency and the use of student data in instruction are valuable, we do not include these elements in our characterization of blended learning. Blended learning that substitutes for a traditional instructional activity may be unlikely to impact outcomes, while a use of blended learning that innovates instruction and student activity is more likely to have a positive impact. Both of these, however, may be characterized as blended learning.

Digital learning encompasses online learning and blended learning and refers to any use of either of these.

Educational technology includes digital learning as well as additional technologies that apply to activities other than instruction, such as student information systems and other technologies, that support teachers and administrators without involving students directly.

A hybrid school combines online and face-to-face instruction and meets the following characteristics:

- The school enrolls students, receives FTE funding (ADA/ADM/PPOR etc), and is listed as a school by NCES.

- The school has a physical location which students regularly attend for instructional purposes.

- The large majority of students must take part in learning activities at the physical location at least occasionally.

- Students are not required to attend the physical campus on a schedule that approaches a regular school schedule. The school might require students to be on campus a couple of days per week, but never five days per week.

The Virtual Learning Leadership Alliance published a longer set of definitions available on the DLC website.

ONLINE SCHOOLS

What they are

A school that enrolls students, receives FTE funding (ADA/ADM/PPOR etc.), and is listed as a school by the National Center for Education Statistics (NCES).

Most are charter schools; some are authorized by or run by districts.

Students receive all of their instruction online, including communicating with online teachers via online tools and telephone.

Much instruction is asynchronous, augmented by real-time lessons.

Most online schools (as defined here) attract students from across the entire state (or a region of contiguous counties in California).

Level of engagement

100%

An online school is the main source of education for its students; as such students are 100% engaged in the online instructional model.

Time and space

An online school operates outside of most time and space constraints.

Students can learn at any time and from any place with a computer and Internet connection.

Students often use print materials in additional to digital content, so can learn even without a computer.

Schools may have required synchronous classes or check-ins.

Most online schools must operate within school calendar years with elements such as the dates of high stakes assessments, and in some cases instructional hours for funding purposes, mandated by the state.
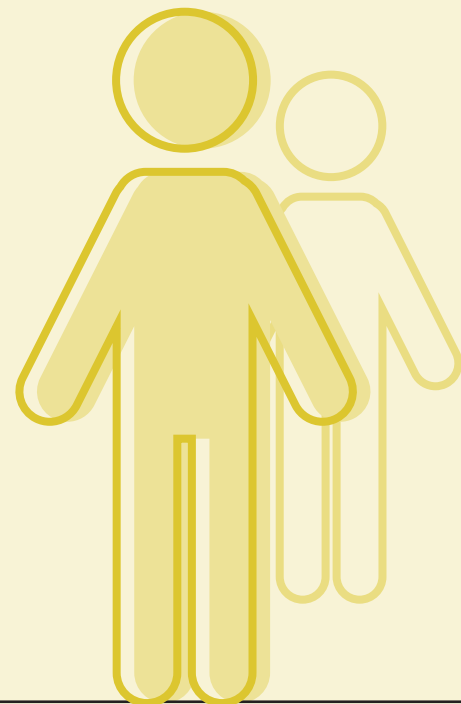
32 states

Number of states that allow online schools to operate and draw students from across districts as of school year 2018–19.
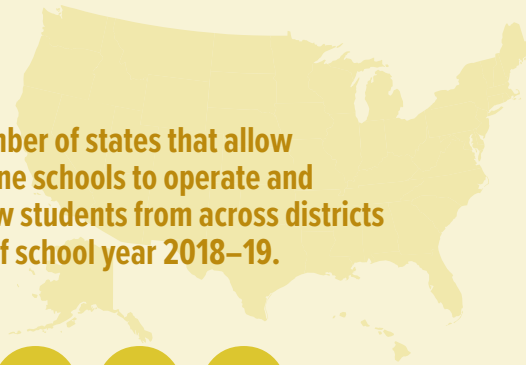
375,000

**Number of students who attend these schools**

Did you know?

Online schools used to be a fairly distinct category in that most were stand-alone schools that attracted students from across entire states. Recently, however, an increasing number of districts have their own online school for their own in-district students. These **district online schools** often have a physical facility to allow their students to take online courses from a school building. Further complicating the situation is that in some states like Colorado, schools are characterized by the Department of Education as online but have most students attending a building. This approach gives the school considerable funding and attendance flexibility.

Student demographics

Most online school students have needs that are not well met by traditional schools, desire a high level of time flexibility, and have parents/families who are able to support their learning at home. Often they:
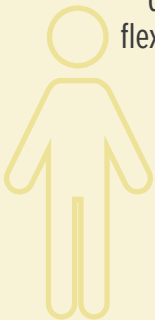
- Are interested in arts, athletics, or other pursuits at a level that requires scheduling flexibility

- Need scheduling flexibility due to mental or physical health issues

- Have experienced bullying or other social issues at their traditional school

- Are formerly home school students (25%– 30% in many states, although with variation between states)

- Want scheduling flexibility either because they are advanced (want to be able to move more quickly) or they are struggling academically (want the ability to perhaps slow down to achieve better understanding)

Online schools have a significant impact despite enrolling relatively few students

Full-time public online schools that enroll students from across regions or states operate in 32 states (Figure 2). During school year 2018–2019 they collectively enrolled 375,000 FTE students (less than 1% of all K–12 students in the United States). Even in states that have had online schools for two decades or more, few states have more than 2% of their students enrolled in full-time online schools, and no state has more than 4%.

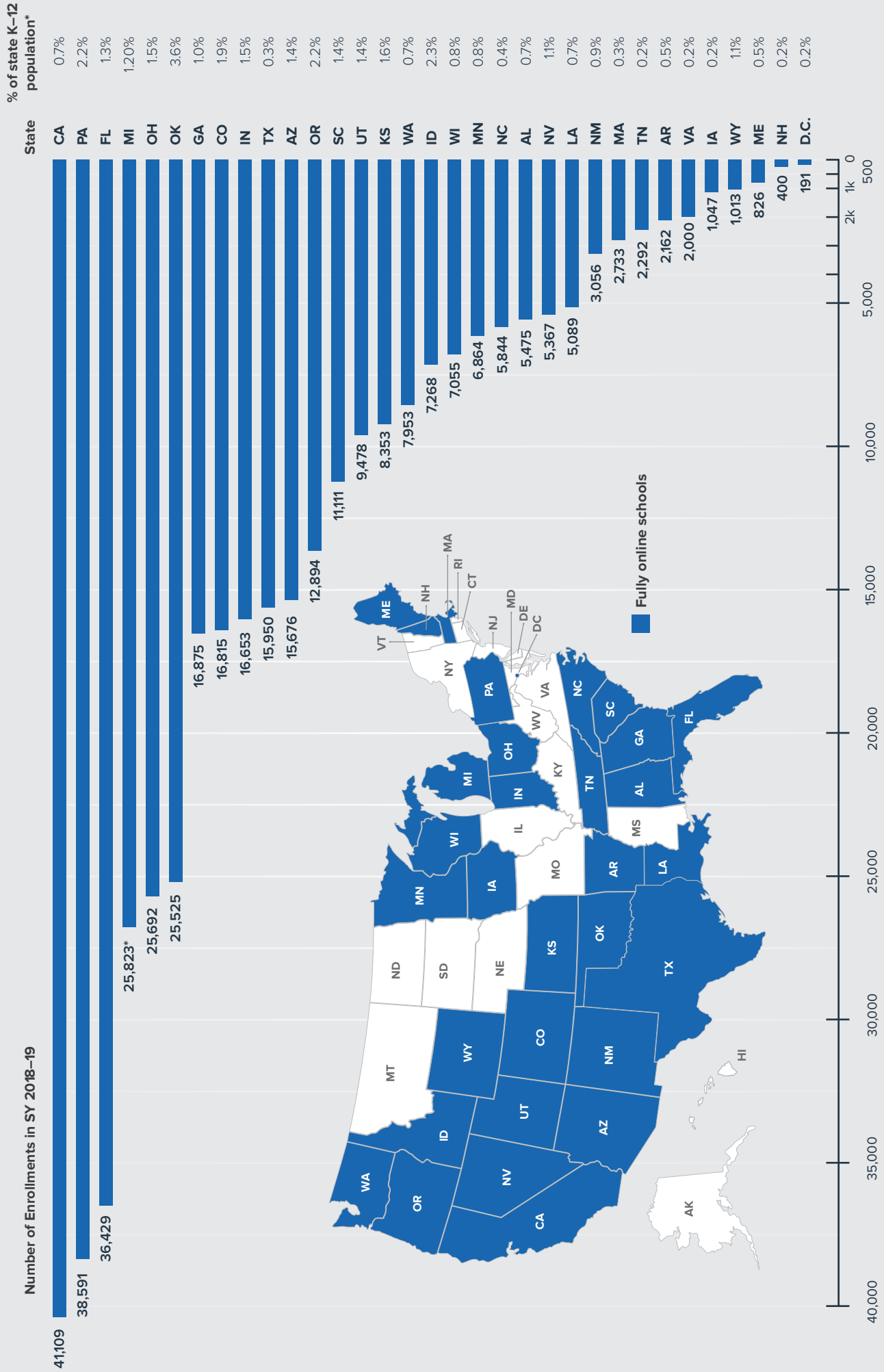These schools are limited in number, but have a disproportionate impact in several areas:

- For the small number of families who choose online schools, parents often feel that the school is the best option for their child. For some students with health issues, an online school may be their only viable option.

- Because these schools operate entirely at a distance, they must figure out how to communicate with students, engage them, and teach challenging subjects—especially math—entirely online. No online school has figured out how to do all these things perfectly, but their efforts and findings inform schools that use online materials and instruction to an important, but lesser, extent.

- Because these schools attract many students who would otherwise be enrolled in another district, homeschooled, or in a private school, they draw attention to their funding levels and costs. Many online schools also attract a large number of students who are highly mobile, and arrive deficient in credit accumulation, often resulting in graduation rates and assessment scores that are lower than state averages.

For these reasons and others, full-time online schools receive considerable attention from media and policymakers. Every year, multiple states consider changes to how online schools operate or are funded. Education Commission of the States (ECS) reports, for example, that between 2017 and 2019, 106 bills related to online schools were introduced in 36 states, and 45 bills were passed in 25 states.[1] Proposals for shutting or greatly restricting online schools were included in some cases, but are only occasionally enacted. Over the last few years leading to early 2020, we have seen few states changing their laws and rules to allow full-time online schools.

Laws passed in recent years tend to fall into three main categories as delineated by ECS: attendance and engagement (e.g., IN); authorizing and governance (e.g., CA and CO); and funding and attendance reporting (e.g. OK and OH). Notwithstanding the fact that these laws impact schools and students, they are relatively minor compared to the overall national online school landscape.

States with Statewide Fully Online Schools

FIGURE 2: NUMBER OF STUDENT ENROLLMENTS BY STATE AND PERCENTAGE OF STATE'S K–12 POPULATION

Number of Enrollments in SY 2018–19

State	Enrollments	% of state K–12 population*
CA	41,109	0.7%
PA	38,591	2.2%
FL	36,429	1.3%
MI	25,823*	1.20%
OH	25,692	1.5%
OK	25,525	3.6%
GA	16,875	1.0%
CO	16,815	1.9%
IN	16,653	1.5%
TX	15,950	0.3%
AZ	15,676	1.4%
OR	12,894	2.2%
SC	11,111	1.4%
UT	9,478	1.4%
KS	8,353	1.6%
WA	7,953	0.7%
ID	7,268	2.3%
WI	7,055	0.8%
MN	6,864	0.8%
NC	5,844	0.4%
AL	5,475	0.7%
NV	5,367	1.1%
LA	5,089	0.7%
NM	3,056	0.9%
MA	2,733	0.3%
TN	2,292	0.2%
AR	2,162	0.5%
VA	2,000	0.2%
IA	1,047	0.2%
WY	1,013	1.1%
ME	826	0.5%
NH	400	0.2%
D.C.	191	0.2%

Fully online schools

*number from SY 2017-18

Giving students fully online learning options across multiple counties

Compass Charter Schools
18 counties in California

Compass Charter Schools is made up of three virtual public charter schools that serve scholars from Transitional Kindergarten (TK) through 12th grade in 18 counties in California, with locations in San Diego (1,351 scholars), Yolo (668 scholars), and Los Angeles (948 scholars). Compass is one of a very few virtual schools to offer AVID, and they are also an Energy Bus Certified School and Kindness Certified School. Compass teachers are California-credentialed and split their FTEs across the three charters. A number of teachers have their Leading Edge Certification, and Compass educators are working toward their Google Certified Educator Certification in 2019–2020. A majority of their online high school courses are also NCAA approved. Compass has two virtual instructional programs — the Online program and the Options program.

The Online program uses prescribed curriculum offered by curriculum providers. In the Online program, certificated teachers provide instruction and support, including live weekly learning labs that feature lesson reviews, Q&A time, and Compass-wide announcements, to the scholars as they work through their learning. Compass employs core content teachers as well as tutors who help support scholars as needed by identification through Multi-Tiered System of Supports (MTSS) and Response to Intervention (RTI). Tutors assist scholars with academic skills gaps through weekly tutoring sessions. Additional vendors are provided for MTSS tier 3 scholars (those who need intensive, individualized help) for additional layers of support and growth.

In the Options program, scholars have a set amount of funds to partner with educational facilitators to determine best learning strategies and then identify appropriate curriculum. Scholars are supported with certificated teachers called educational facilitators. This approach entails a major instructional role for the scholar's parent/guardian/learning coach. While the educational facilitators still assign work, provide grades, and issue report cards, much of the learning is happening in the home via the learning coach. Tutors in the Options program assist scholars as well.

In addition to the teachers, Compass has an extensive support structure in place. For both programs, a scholar success coordinator and academic coordinators help guide the scholar through review of regular progress reports. Based on the reports, the coordinators meet with the necessary staff to help bridge the support gaps. The scholar support structure also includes four counselors along with a college and career readiness counselor, and a director of counseling services. This team delivers, promotes, and enhances the learning process for all scholars in grades 6–12 with the delivery of a comprehensive school counseling program, driven by scholar data, and based on standards in academic, personal/social development and college career readiness skills. A special education program includes a director of special education, coordinator, and special education instructors. An Engagement Department provides extracurricular offerings including scholar-led clubs, field trips, Learning Coach Academy for parents, and other special opportunities. The scholars and parents currently get an orientation to Compass when they enroll to provide an overview of the school and expectations, along with a handbook and packet with resources and information. All sessions are recorded and provided for families who can't join in real time. Additionally, Online scholars receive weekly report cards on Fridays through the student information system. A Monday morning update for all scholars and parents lets them know about events, deadlines, and important updates.

"The Compass Experience is designed with our scholars in mind," said J.J. Lewis, superintendent and CEO. "We pride ourselves on the number of supports that are made available for scholars and parents alike, knowing we are partners along their educational journey, which is why we consider ourselves to be the 'Gold Standard in Virtual Education.'"

Providing online learning options for a multi-district consortium

Rural Virtual Academy
Medford, Wisconsin

In 2004, Rural Virtual Academy (RVA) was authorized by the Medford Area Public School District as an online PreK-8 school designed to serve rural families across a consortium of five contiguous districts. Due to parent and student feedback, RVA expanded to high school in 2013. Fast forward to today, RVA serves over 1,100 students across a consortium of 32 school districts, providing not only a full-time online school but also individual supplemental online courses and a blended learning initiative. The focus for this profile is their full-time online school, which is available to all district students in grades PreK–12. As Charles Heckel, Administrator of RVA emphasized, "Our model keeps students in their respective districts and provides revenue sharing between RVA and the consortia districts." RVA's online course catalog offers students access to a variety of courses, many more than what most of the small districts in the consortium would otherwise be able to provide. RVA uses both its own staff and also district shared staff, which provides more opportunities for course offerings and lower class sizes. All full-time RVA staff are employees of the Medford Area Public School District, RVA's authorizer. RVA uses content and resources provided by the Wisconsin eSchool Network (WeN) to support their offerings. RVA has 37 live collaboration classrooms that students log into to join their teachers and classmates. The students move between their online classrooms like they would in a traditional school.

Instructional models and support structures vary based on student grade level. For PreK–5, the parent/guardian is the mentor, working along with their child or children at home with online teacher support. About 60% of their elementary families use off-line, book-driven curriculum options, 30% use combinations of online and offline curricula, and the remaining 10% utilize solely digital course content. Parent-teacher conferences are scheduled a minimum of three times per year, where teacher and parent look closely at the students' skill sets, assess where they are, and develop learning pathways. As students get older, they interact with teachers more often, and with parents/guardians less. In the upper grades, multiple teachers and school counselors enter the picture. Beginning in 6th grade, RVA offers synchronous online courses, such as math and reading, which parents/guardians have the option of enrolling their children in, or they can continue to work independently with their children at home.

In high school, the curriculum is completely online, and 95% of students participate in a variety of live, daily, direct online instruction classes. Three-week grade reports are sent to parents/guardians so that they have a clear view of where their child is in terms of pace, progress, and grades. All students are required to attend their live, synchronous classes for the first three weeks of each semester. Once the three-week grade report comes out, the parent/guardian and teachers can determine if the students have to be at the live lessons, especially if they are working ahead and exceling at the course. Other students who are falling behind are required to go to daily instruction.

RVA operates like a traditional school in that student supports include a special education department, school counseling services, administrative support, and educational teacher and aid support. The counselors deal with counseling issues, scheduling, and ensuring credits are being attained. Special education staff work with special education students, and pupil support staff and administrative staff work with student councils, clubs, and groups. For academic supports, RVA has intervention periods and response-to-intervention programs prior to special education referrals. RVA is able to provide virtually in some capacity any support service that would be found within a traditional school environment. The services are provided to students through live meetings via web conferencing.

HYBRID SCHOOLS

What they are

A school that enrolls students, receives FTE funding (ADA/ADM/PPOR etc.), and is listed as a school by the National Center for Education Statistics (NCES).

Most are operated by districts for their own students, but some are run by regional service agencies such as BOCES or County Offices of Education.

**Most hybrid schools are high schools, although some cover all grade levels.**

100%

Level of engagement

A hybrid school is the main source of education for its students; as such students are 100% engaged in the hybrid instructional model.

Time and space

A hybrid school has a physical location at which students are regularly present for instructional purposes.

The large majority of students take part in learning activities at the physical location regularly.

Students are not required to attend the physical campus on a regular schedule similar to a traditional school (i.e. Monday through Friday from 8am to 3pm).

Students take online courses or access online content in lieu of onsite instruction.
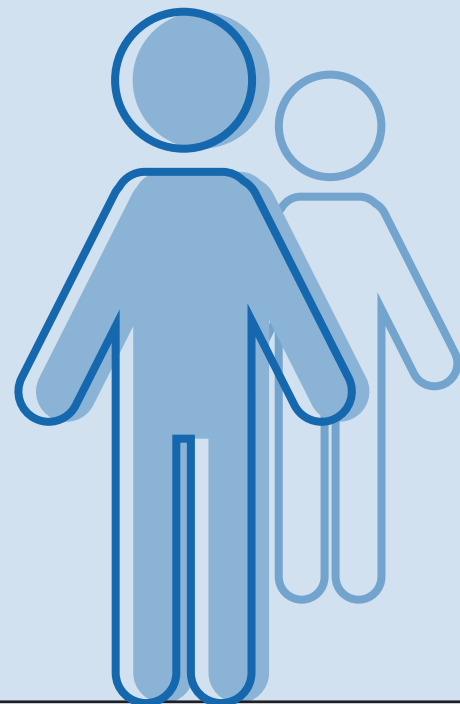
Hybrid schools are not a category listed by the National Center for Education Statistics, nor counted by any states of which we are aware. In addition, the hybrid school characterization makes it hard to know if some schools should be counted as hybrid. Our best guess is that there are several thousand school sites that fit the hybrid definition, many of which are run under alternative education programs, by BOCES or County Offices of Education, but no more than a few hundred stand-alone hybrid schools that enroll more than one hundred students.

Did you know?

Some hybrid school leaders have a goal of modeling their schools after non-school environments. Village High School in Colorado, for example, says that it seeks to operate "like an adult work place." Springs Studio for Academic Excellence, also in Colorado, calls itself a "studio" because it seeks to be similar to a dance, art, or architecture studio, in which people create rather than passively take in information. Hybrid elementary schools in some ways look like Montessori Schools in the ways that students self-select into groups and activities, under a teacher's guidance but in a less formal setting than many classrooms.

Student demographics

Most hybrid school students have needs that are not well met by traditional schools, including students who are:

— Interested in arts, athletics, or other pursuits at a level that requires scheduling flexibility

— Pursuing jobs or internships

— Taking college courses and perhaps seeking an associate's degree while graduating from high school

— In need of scheduling flexibility due to mental or physical health issues

— Desiring a small school and social environment that is different than a usual school.

— Needing to catch up on credit accumulation after falling behind in a previous school
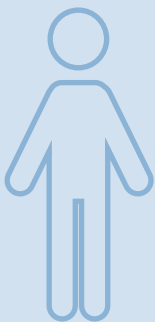
Providing flexible learning for students following outside pursuits

Crossroads FLEX High School
Cary, NC

Crossroads FLEX High School, a hybrid school serving students in grades 9–12, in Cary, North Carolina, opened in August 2016 as part of the Wake County Public School System. Crossroads FLEX currently serves 150 students. Nartarshia Sharpe, the Dean of Students, expressed that their district staff and community members believed, "We have students in our buildings who have opportunities because of their talents and abilities, but those opportunities interrupt the traditional school day." WCPSS worked to figure out a solution to help the students take advantage of these opportunities while obtaining their high school education. The focus for Crossroads FLEX is on students whose outside interests and activities require a considerable amount of time during the regular school hours. These can include someone who is highly competitive and/or active in the arts, sports, or has other obligations such as extensive work schedules, all of which are known as "pursuits." Their student population is made up of athletes, such as soccer, baseball, and hockey players, and swimmers and gymnasts, as well as artists, such as singers, songwriters, filmmakers, dancers, actors, and models, just to name a few. Crossroads FLEX also has an entomologist who travels the world working with scientists as well as another student who is active in social justice advocacy, speaking at events around the country.

The Crossroads FLEX building is an open and flexible learning space. Students may attend school anytime between 7:30am and 5pm Monday through Friday. If students train in the morning, they can come to school mid-morning or mid-afternoon and vice versa if they train in the afternoon. Students are required to be on-site a certain number of hours a week; for freshmen, it's 15 hours per week, and for the other grades, it's 10 hours per week. Students are typically on campus twice as much as they're required to be because the students know that they can get support from teachers and their peers when they are in the building.

Instruction is provided by four content specialist teachers — English, Math, Social Studies, and Science — onsite as well as through the North Carolina Public Virtual School (NCVPS). If a student's schedule allows for it, the student can take their core courses face-to-face on designated days at the Crossroads FLEX building. Classes are 90 minutes long and are offered twice a day to accommodate different schedules. The content specialist teachers also provide online content, on the same platform used by NCVPS, to supplement the face-to-face instruction. As Debbie Ray, the Principal, emphasized, "Even when students are not on-site, we are clear about the expectation of students spending approximately 90 minutes a day on each of their courses." If the students have a scheduling conflict with those core course offerings because of their pursuit, then the student enrolls in an NCVPS course. In addition to having a teacher in their NCVPS course, they also receive support from the content specialist at Crossroads FLEX.

Crossroads FLEX is continuously in touch with traveling students through their teachers, counselor, and coaches. The Crossroads FLEX team meets every three weeks for a "Data Dive" to review each student's progress. During the Data Dive, the team puts in supports for struggling students, such as one-on-one sessions, small groups, or parent-student-teacher conferences. Sharpe said, "The staff helps students with organization and time management to help them get back on track. There is also an intervention matrix that we use if a student is not responding to core instruction. This provides students with that next level of support if they need it. We build relationships here, and our goal is for our students to feel connected even when they are away. For us, school goes along with you wherever you go."

Serving diverse student needs by breaking down time and space barriers

The Village High School, Academy District 20
Colorado Springs, CO

The Village High School is a hybrid school, combining online and face-to-face instruction, that is part of Academy District 20 in Colorado Springs. Most students take online courses and also visit the campus regularly, while a smaller percentage of students are full-time online via the Access program.

The Village started as a fully online program for all students. The district found, however, that although a small percentage of students needed the fully online model and did well, overall students were highly mobile, did not stay for long in the online school, and overall outcomes were not very strong.

When Nathan Gorsch, Village principal, joined the school, he started the process of rethinking all aspects of time and space. He explains that his team "started by asking, 'if we knew nothing about high school, how would we build it?' Our first answer was it would look nothing like a typical high school. The team wanted to build something new."

Key components of The Village's instructional model include:

- Students are expected to attend the physical school on Monday-Thursday, from 9:30am–1:30pm. "Office hours" are available for two hours before and after. Fridays are used for "expeditionary electives."

- The Village focuses on the question of "What skills do students need to set them up for post-secondary success?" The school's answer is "independence, literacy, wellness, communication, collaboration, passion, and creativity.

- All students have a mentor who helps them with everything from help in classes to navigating school and out-of-school issues. Students consistently report that their relationships with mentors and other teachers are a key to their success.

- Core classes combine online content with an onsite teacher. Students move through these courses at their own pace. Electives are entirely face-to-face; most are collaborative and experiential.

Principal Gorsch, teachers, and students all list the important and unusual role of teachers as a key to the school's success. As Gorsch explains, "the primary role of a teacher isn't to know and share content. Students need teachers to be a mentor, interpret information, and build critical thinking." Teaching positions at The Village receive many applications, because "teachers recognize that they will spend much less time planning lessons, they don't have to do much grading, and instead they have the opportunity to spend more high-quality time with students." He notes that the state system for evaluating teachers doesn't fit the school model very well, but insists that he knows Village teachers better than most principals, in part because of the extra time that he and teachers have, and in part because of what he calls "our data-rich environment."

The school has about 215 students enrolled, with another 100 on a waiting list—which is a sign that students, families, and the district recognize the value in this new instructional approach.

SUPPLEMENTAL ONLINE COURSES
WITH ONLINE TEACHERS

What they are

Full courses that provide credit towards grade advancement or graduation.

They include content (text, graphics, videos, etc.) and assessments.

The course includes an online teacher, often employed by the course provider, who is in regular contact with students via online communications tools and telephone.

Much instruction is asynchronous, sometimes augmented by real-time lessons.

The course is housed within a technology platform, which is usually a learning management system.

Level of engagement

An online course provides the entire course content, interaction with the teacher, and curriculum progression via online content, sometimes with additional print materials. Student are engaged entirely online for that portion of their education, while typically taking courses at a brick-and-mortar school in their remaining time.

Time and space

Online courses have the potential to eliminate barriers of time and space. In theory, students can take online courses at any time, from any place, and at their own pace.

In reality, many students take online courses to coincide with a school semester. Some online courses are organized on semester schedules to allow students to work in cohorts. In addition, some students access their online courses primarily from their brick-and-mortar school, and some schools may require that students do so.

1,015,760

State virtual schools make up one category of online course provider, and collectively serve 1,015,760 course enrollments.

No other national data sources are available to determine how many online courses are completed nationwide. A reasonable guess is that the number is several million. Other providers of online courses include companies, non-profit organizations, intermediate units, and school districts.

Did you know?

A commonly understood use case is of a school offering an elective such as an online world languages course because the school doesn't have a Mandarin teacher. Although this is a common use case, the numbers from state virtual schools suggest that core courses make up a higher percentage of online course enrollments than world languages and other electives. In some states where courses such as health or personal finance are required for high school graduation, students often take these courses online to free up time in their regular school schedule for courses that they perceive to be more important or more challenging.

Student demographics

Many different types of students take supplemental online courses. We are not aware of any data showing that certain types of students are more (or less) likely to take such courses. However, small, rural schools and districts are more likely to use a higher proportion of online courses than larger urban and suburban districts. Small and/or rural schools and districts often use online courses to augment their course offerings, which tend to be limited compared to their larger counterparts.

State virtual schools provide a data set to explore the use of online courses

VLLA | VIRTUAL LEARNING LEADERSHIP ALLIANCE

The data for this section were provided by [The Virtual Learning Leadership Alliance](#) (VLLA), a 501c3 educational nonprofit organization consisting of leaders from innovative online learning programs in the US.[2]

Online courses that include online teachers are among the earliest use cases of digital learning. In the late 1990s and early 2000s, about half of all states created a state virtual school. Fast forward to 2020, state virtual schools remain an important part of the digital learning landscape. Among the reasons that they are significant is that they provide publicly available data about their course usage that private providers are (understandably) less willing to share. State virtual schools are entities created by legislation or by state–level agencies, usually funded partially or entirely by state appropriations, course fees, and/or grants. As of early 2020, state virtual schools operate in 21 states (see Figure 2), collectively serving 1,015,760 course enrollments. FIGURE 2: States with state virtual schools. Alaska, Texas, Utah, and South Dakota previously were states recognized as having state virtual schools in *Keeping Pace* reports. Snapshot 2019 also included New Mexico, but this year, it has been removed as it has closed.

FIGURE 2: States with state virtual schools. Alaska, Texas, Utah, and South Dakota previously were states recognized as having state virtual schools in *Keeping Pace* reports.

States with Virtual Schools

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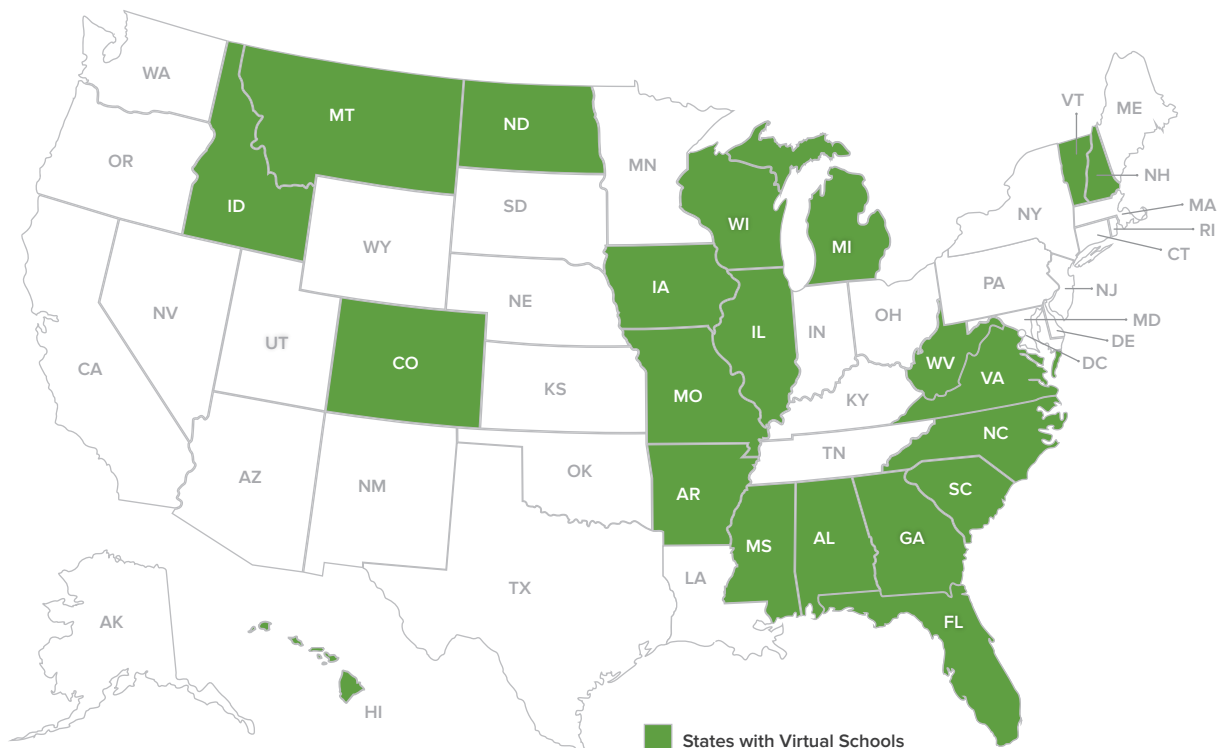
[2] The VLLA members include Colorado Digital Learning Solutions, Georgia Virtual School, Idaho Digital Learning, Illinois Virtual School, Indiana Online, Michigan Virtual, Montana Digital Academy, Nevada Learning Academy at CCSD, NC Virtual, Virtual Arkansas, VHS Learning, VirtualSC, Virtual Virginia, Wisconsin eSchool Network, and Wisconsin Virtual School.

Most state virtual schools are not "schools" as defined by the National Center for Education Statistics, as they do not grant diplomas and are not responsible for many of the functions performed by schools (such as administration of state assessments, state and federal reporting, counseling, etc.). Instead, they supply online courses and related services to schools. Students are usually enrolled with district approval, with the exception of states with course access policies. Even then the school or district plays an integral role in counseling, mentoring, and enrolling students in the state virtual school. State virtual schools acquire their online courses from a wide range of sources. Some, like the Missouri Virtual Instructional Program and West Virginia Virtual, mostly or entirely rely on courses and teachers from private vendors, which they then provide to schools across their state. Others, such as Florida Virtual School, Alabama ACCESS, and Georgia Virtual School, largely develop their own course content. Illinois Virtual School, Montana Digital Academy, and others combine original development with vendor courses to provide a complete course catalog.

TABLE 1: **State virtual schools**

STATE	STATE VIRTUAL SCHOOL	YEAR OPENED	GRADES SERVED	2017–18 TOTAL COURSE EN–ROLLMENTS
Alabama	Alabama ACCESS	2004	7–12	81,297
Arkansas	Virtual Arkansas	2013	7–12	49,351
Colorado	Colorado Digital Learning Solution	2015	7–12	1,515
Florida	Florida Virtual School	1997	K–12	512,438
Georgia	Georgia Virtual School	2005	6–12	64,721
Hawaii	Hawaii Virtual Learning Network	2007	7–12	NR
Idaho	Idaho Digital Learning Academy	2001	6–12	31,321
Illinois	Illinois Virtual School	2001	5–12	5,059
Iowa	Iowa Learning Online	2004	7–12	NR
Michigan	Michigan Virtual	2001	6–12	28,402
Mississippi	Mississippi Virtual Public School	2006	11–12	1,755
Missouri	Missouri Virtual Instruction Program (MoVIP)	2007	K–12	1,689
Montana	Montana Digital Academy	2010	6–12	6,691
New Hampshire	VLACS Virtual Learning Academy	2007	6–12	25,667
North Carolina	NC Virtual	2007	6–12	112,626
North Dakota	North Dakota Center for Distance Learning	1996	PK–12	5,040
South Carolina	Virtual SC	2006	K–12	44,266
Vermont	Vermont Virtual Learning Cooperative	2010	6–12	2,104
Virginia	Virtual Virginia	2002	6–12	30,210
Wisconsin	Wisconsin Virtual School	2000	6–12	7,110
West Virginia	West Virginia Virtual School	2000	6–12	4,498
TOTAL course enrollments served by all state virtual schools (2017–18)				1,015,760

*NR = Not Reported

Offering variety in supplemental online learning

Virtual Learning Academy Charter School (VLACS)
Exeter, NH

Founded in 2007, Virtual Learning Academy Charter School (VLACS) serves over 12,000 students grades 6th–12th, and is planning to expand into 4th and 5th grade in 2020. Approximately 400 students are full-time, and the rest are supplemental with 72% in traditional public schools, 15% homeschooled, and the remaining divided between drop outs, private schools, and charter schools. VLACS uses open enrollment; students start anytime, and they are on a flexible pace.

> **"We can look at the student success rate and see a direct correlation with the relationship building."**
>
> – Steve Kossakoski,
> Founder and CEO of VLACS

VLACS has over 300 offerings, divided into three different "Journeys." The first journey is the traditional course. Courses offer flexible, asynchronous learning, and the instructors work to build relationships with their students and their parents. VLACS will not start a student in a course until they meet with the parents virtually to establish the importance of parental involvement. As Steve Kossakoski, Founder and CEO of VLACS emphasized, "We can look at the student success rate and see a direct correlation with the relationship building." Parent log-ins, monthly progress reports, and required instructor-teacher-student meetings build a base for foundational student support. In the Course Journey, VLACS students can earn badges in different career areas. Through badging, VLACS wants students to see what learning looks like beyond the classroom; if students want to pursue industry certifications, VLACS builds that into the learner's experience. As an example, a student can be on a work site earning competencies while pursuing their industry certification.

Projects make up the second journey. The project curriculum was created by VLACS and is focused on putting the student into a fictional scenario where they create learning artifacts that are true to the industry that they're in. For instance, a student in English might assume the role of a copy editor who is working for a marketing department that has an account with a real estate developer, and the student has to create all of the marketing materials. Projects take three to four weeks, targeting a single competency. There are six to seven competencies per half credit that are the same competencies found in a course, but the students earn those competencies through the Project Journey.

The third journey is Experiences, which is wide open, allowing students to create their own learning adventure. To take advantage of this journey, students propose an experience to their teacher. For example, the student could say, "I'd like to earn a credit in coding, but I want to do it on my own." The student and teacher would work to establish what the experience would look like in terms of competencies. Work-based opportunities are included and feature live interviews, job shadows, and micro-internships with industry mentors. VLACS hopes to expand the Experiences opportunities into classrooms across the state to help teachers connect their students with ways of learning beyond the traditional coursework.

The journeys are available for 9th through 12 graders, while 6th through 8th graders have the options of courses, projects, and live interviews. Students are able to jump from one journey to another and combine journeys as they create their own path through their learning process. Kossakoski says that he sees students who have been in a traditional education system for 10 years who are overwhelmed when the door to learning is opened to the world. VLACS Advisors are helping students shift their traditional mindset to envision the learning opportunities that are available to them through the Projects and Experiences Journeys.

Implementing supplemental online learning at a district

Glynn County School District
Brunswick, Georgia

Glynn County School District (GCSD) is located in Brunswick, Georgia, and serves about 12,000 students in grades K–12. In order to meet the needs of their students, GCSD started incorporating supplemental online learning using Georgia Virtual School (GaVS), a division of the Georgia Department of Education, in 2004. Both the middle and high schools use GaVS courses for a variety of reasons — scheduling conflicts, overbooked classes, bringing students to a full schedule (required in Georgia), enabling students to take more classes at one time, CTE courses, anxiety, pregnancy, health issues, disciplinary issues, lack of qualified teachers, professional athletes, accelerated learning, remedial skill building, particular language offerings, and more. Recently, GCSD agreed to allow students who require disciplinary action to complete their suspension at home while continuing their learning through GaVS. Additionally, GCSD has used GaVS to help transfer students who come from a state where the curriculum is not completely aligned with GA curriculum.

In fall 2019, GCSD had 231 course enrollments in GaVS across all of its schools. The majority of the enrollments were from the high schools (196) with the remaining from the middle schools (35). These enrollments are representative of the ones recorded throughout the rest of the academic year. GaVS uses GA-certified teachers, and all GCSD schools have a designated space, usually the media center, for the students to do their supplemental online course work. The GaVS teachers communicate regularly in chat rooms, through announcements on the course page, and through emails. The media specialist typically monitors student attendance, and students taking supplemental online courses can use the computers that they're provided from GCSD to do their online coursework. Students who take all of their courses online typically are at home and use their personal computer.

Students are advised to meet with their counselors to discuss the possibility of taking an online course because, as Diann Meeks, GaVS Facilitator for GCSD, shared, "The counselors know the students' strengths, weaknesses, and can help them make informed decisions." If a student wants to take an online course, GCSD pays for their course. If the students' support staff believe the student should not be taking online courses, GCSD can encourage the student to take a different learning route. However, if the student and parent insist on the online course, GCSD will pay for the course. When students take more than a full load of courses, the county pays for the course. Once the students are enrolled with GaVS, they are required to take an orientation focused on the learning platform, how to submit assignments, what browser is best to use, and course deadlines.

If the students are having trouble within their courses, they contact their GaVS instructor, the GaVS Facilitator for GCSD, or, if they're having a technology-related problem, the student submits a tech ticket. When a student is not doing well, the GaVS teacher reaches out to Meeks who then reaches out to the parents, student, and counselor to help the student get back on track. Additionally, Meeks pulls a report on each school's students and sends those reports to the schools each week to let schools know how their students are performing. At the end of the course, students are given a numeric grade, and the course is included on the student's transcript. Meeks said that GCSD continues to think creatively about how they can expand their relationship with GaVS in order to offer more opportunities to students.

SUPPLEMENTAL ONLINE COURSES
WITH ONSITE TEACHERS

What they are

Online curriculum that includes the full scope and sequence of a for-credit course.

Content may be delivered as text, graphics, videos, or in other formats. Most content is usually delivered as text.

The course includes interim and final assessments.

Content may be housed in its own platform or in a learning management system.

Unlike skills software (a separate category discussed below), the online does not focus primarily on drills and assessments but instead is delivering information and explaining concepts. Math and ELA courses may include drills and practice tests.

The onsite teacher mostly works with students one-on-one or in small groups.

Level of engagement

The extent to which the student is engaged with the digital content versus engaged with the onsite teacher varies. Many fully online courses with onsite teachers are used for credit recovery, which may be taken in conjunction with, or separately from, traditional classes. The discussion below focuses on credit recovery courses while acknowledging that some unknown percentage of such courses are used for original credit.

Time and space

From a school district perspective, using online credit recovery courses with onsite teachers allows the district to offer a consolidated credit recovery program that covers many subjects outside of traditional school hours.

These courses may be offered during the regular school day, after school, on Saturdays, or during the summer.

Online courses that include a diagnostic assessment may allow students to gain credits while re-taking only the portion of the course in which they must demonstrate competency.

15%
of high school students took credit recovery courses
(U.S. Department of Education[3])

If we estimate that 65% of credit recovery courses are online, that would suggest about

1.5mil
students took online credit recovery courses.

Student and school demographics

The same study reports that 89% of high schools offer credit recovery courses, and of these 71% offer online credit recovery and 46% offer "blended" credit recovery (part online and part onsite).

Urban schools were more likely to offer credit recovery than suburban schools, high-poverty more likely than low-poverty, and large schools more likely than small schools.

3 US Department of Education, "Issue Brief: Credit Recovery," March 2018, https://www2.ed.gov/rschstat/eval/high-school/credit-recovery.pdf

4 American Enterprise Institute, Second Chance or Second Track? Credit Recovery Participation in US High Schools, September 2018. https://www.aei.org/research-products/report/second-chance-or-second-track-credit-recovery-participation-in-us-high-schools/

5 American Institutes for Research, The Effect of Online Versus Face-to-Face Credit Recovery in Algebra I on High School Credit Accumulation and Graduation, June 2017, https://www.air.org/system/files/downloads/report/Effect-Online-Versus-Face-to-Face-Credit-Recovery-in-Algebra-High-School-Credit-Accumulation-and-Graduation-June-2017.pdf

Did you know?

The use of online courses for credit recovery has generated significant controversy among skeptics who question whether students are learning the course content. As graduation rates in the U.S. have climbed in recent years, other measures of educational attainment such as SAT and ACT scores have not followed suit. The debate entails more data and opinions than we can cover in this report, but we suggest starting with the 2018 report from the American Enterprise Institute, *Second Chance or Second Track? Credit Recovery Participation in US High Schools,[4]* for a good overview. We also suggest reviewing the American Institutes for Research report *The Effect of Online Versus Face-to-Face Credit Recovery in Algebra I on High School Credit Accumulation and Graduation*, which found "no significant differences between online and face-to-face students in pass rates in subsequent math classes or their likelihood of being on track for graduation at the end of the second year of high school."[5]

Blending face-to-face instruction with online content for gifted middle schoolers

Kenosha eSchool
Kenosha, Wisconsin

In 2008, Kenosha eSchool opened as a charter school to serve 9th–12th grade students in Kenosha Unified School District (KUSD) who were not able to get the courses they needed at their high schools. Over time, elementary and middle school courses were added. Today, Kenosha eSchool serves students in grades K–12, including 900 part-time students and 100 full-time. The school offers different opportunities for students, one of which is the blended initiative, designed for gifted middle school students who are interested in advanced learning in math and English. In the 2019–2020 school year, there are approximately 35 students in the program. Students can qualify for math and/or English.

Upon students' enrollment in the program, KUSD provides both parent and student orientations. The blended initiative brings together onsite teachers with online curriculum and has two KUSD teachers, one for math and one for English, who serve as the teachers of record for the courses. The online curriculum is purchased from third party providers and delivered in a learning management system; the teachers change the curriculum and add pacing guides as needed to fit their instructional schedule, which includes face-to-face and online time with students in their traditional schools.

The teachers physically travel to each of KUSD's five middle school buildings once a week to meet with their students face-to-face in a designated classroom or space in the library. The teachers stay at each school for about 45–65 minutes. During this time, teachers and students concentrate on the non-computer-based work, such as collaborating on enrichment projects or problem-solving activities that enhance the curriculum.

> **"Some people think 'If you're going back into a building, into a physical classroom, you're defeating the purpose of online learning,' and I completely feel the opposite. To me, this is the perfect blend of online learning and face-to-face learning. I can see what we're doing makes a difference. I'm proud of what we've created for our students in Kenosha."**
>
> – Tracey Keckler, math teacher for Kenosha eSchool's blended initiative

As Tracey Keckler, the math teacher for Kenosha eSchool's blended initiative, emphasized, "When we're together face-to-face, it's really a time for them to interact with me, interact with each other, and get off the computer. Over the years of implementing this, I've continued to make micro-tweaks on how to approach the face-to-face sessions. I tend to do one or two session projects. Anything longer tends to get confusing or overwhelming for the students."

The rest of the week, the students work independently on their courses online in a school-based lab that is staffed with a facilitator who is there for supervision and technology support purposes. Meanwhile, teachers are providing support to students through grading, feedback, email, web-conferencing, and texting.

Keckler shared, "Some people think 'If you're going back into a building, into a physical classroom, you're defeating the purpose of online learning,' and I completely feel the opposite. To me, this is the perfect blend of online learning and face-to-face learning. I can see what we're doing makes a difference. I'm proud of what we've created for our students in Kenosha."

Building confidence, trust, and hope for adjudicated youth

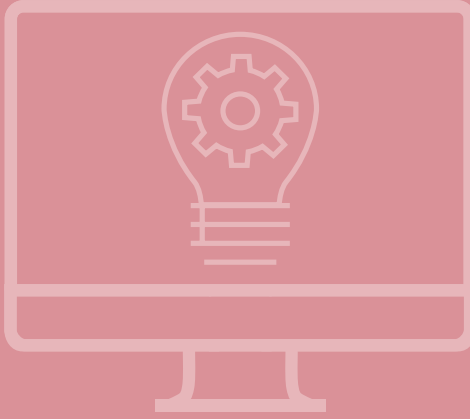## Cascade Co. Juvenile Detention Center
Great Falls, Montana

The Cascade County Juvenile Detention Center (JDC) opened in 1994 in Great Falls, Montana. The JDC education program serves 500 to 600 students per year and up to 30 students at a time. About 25% of the JDC students are from within the county, and the rest are from elsewhere including Mexico. The youth often come from nontraditional homes, very few live with their custodial parents, and a significant portion are involved with Child Protective Services or treatment centers. The JDC students' legal charges range from repeated minor criminal offenses to assault, sexual offenses, homicide, weapons, drugs, and trafficking of persons.

JDC staff estimated that 95% of their students were victims before they committed crimes. Consequently, time spent at the JDC is less about punishment and more about building supportive relationships with students to work on skills they need to be responsible adults. The JDC established an education program in 1999/2000 in partnership with the Great Falls Public School District (GFPSD). The JDC operates and awards credit-based learning under the authority of the district's alternative high school. The education program was created to fill gaps in student learning, to challenge students who have exceptionally high ability levels, to provide high school credit opportunities for students who are eligible to do so but struggle with certain curricula, and to create opportunities for students who need to have an alternate route to graduation. Two teachers serve the JDC, one from GFPSD and one from the County. The teachers individualize instruction for each student. For math specifically, they use an online curriculum called EdReady, which is a personalized assessment and remediation tool provided by Montana Digital Academy (MTDA) that allows the teachers to address individual student learning challenges in mathematics. Thanks to the Dennis and Phyllis Washington Foundation, EdReady is free to anyone in the state of Montana.

April Senger, the GFPSD math and science teacher placed at the facility, who also serves as an online AP Statistics teacher for MTDA, said, "We serve students who range in age between 10 to 18 years old. We can't judge a student by their age or grade level. One day, we have a 7th grader excelling at trigonometry, and the next day another 7th grader struggles with 4th grade math." At any given time, the JDC may have 30 students on different learning paths. Senger continued, "We have to be prepared to teach anyone who walks in the door, no matter where they are academically, behaviorally, and emotionally. Every day is a surprise. It is extremely challenging because planning-wise you are working with abilities from first grade to college level. So when it comes to helping students with varying math needs, the extreme versatility of the EdReady program is a great fit."

Senger added, "The supplemental online curriculum gives our students purpose...they are learning to set realistic, achievable goals for themselves, which is something they have little experience in." One of Senger's students, for example, was in and out of the JDC for two years, and during that time, Senger worked with her to fill in gaps, beginning at the 1st grade level and she ended up graduating with her HiSet diploma. "Online support has played an essential role in student success and the growth of the education program. Adjudicated youth have limited experience with success, and this has not only fostered a belief in themselves but also has carried over into their families and the community."

DIGITAL CONTENT AND SKILLS SOFTWARE

What they are

Online curriculum, instructional materials, and online drills that do not include the full scope and sequence of a for-credit course.

Content may be delivered as text, graphics, videos, or in other formats. Most content is delivered as text. It may be housed in its own platform or in a learning management system.

Content explains academic concepts, theories, and information. Skills software delivers questions that students answer and helps gauge their knowledge of the topic, especially in math or to a lesser extent in English. Content and skills software may be housed in one platform, or separately.

Instructional materials may include teachers guides and similar information to assist teachers in the classroom.

Level of engagement

Digital content and skills software are most commonly used by classroom teachers to supplement their instruction either in class, or as homework. The content may be acquired from a provider, developed by teachers, or a mix of both. It may be housed in a learning management system, an application, or a website.

Time and space

Most digital content and skills software are used in traditional classrooms or as homework, typically following a school calendar and bell schedule.

We are not aware of any reliable usage numbers. Our comments (below) that math is the most common digital content are based primarily on the size and number of companies producing digital content and skills software, but teachers also use extensive content that is freely available on the Internet (sometimes without appropriate attention to copyright issues.)

Did you know?

Calculating numbers related to the use of digital content and skills software is difficult in part because it is unclear where to draw boundaries. With the proliferation of Chromebooks and other devices, and the spread of Google Classroom and learning management systems into most school districts, by some measures almost all schools are using some digital content. Much depends, however, on whether one considers a teacher-created Google document, slides, or spreadsheet to be online content.

Students, schools, and course types

Skills software and digital content are widely used across many subjects, but math has easily the most products, highest usage, and best-developed products. This is in part because math lends itself to online drills, and also because concerns about students' difficulty with math has led to higher level of investment in math products by companies, foundations, and schools. English likely has the second most content and skills software. All other subjects combined make up only a very small part of total activity.

Ending math failure in high school

Mountain View High School
Bend, Oregon

The seventh largest city in Oregon, Bend has about 100,000 people. Mountain View High School (MVHS), in the Bend-La Pine school district, enrolls 1,400 students. MVHS educators were witnessing high failure rates in math for 9th and 10th graders and also found students entering 12th grade without credit in Algebra and Geometry.

Christie McCormick, a Blended Learning Solutions/District Support for Bend-La Pine Online Schools, explains, "Our theory was that we need to catch these students as early as possible in their math trajectory to bolster their skills and grades and confidence...It's a little ridiculous to let students sit in a class for an entire semester before we say, 'Ok, you've failed' when we can identify the kids who are likely to fail much earlier." The impetus for starting this program, which consists of a two-pronged approach, was to support students in their math learning with the goal of ending math failure. The two prongs include Math Triage and the Blended Classroom approach, both of which began September 2019 and use digital content.

Math Triage targets 9th and 10th grade students who fail a chapter test in Algebra or Geometry. When they fail, the student's teacher refers the student to Math Triage during their advisory period. Math Triage is staffed by two teachers who are dedicated to the program. Upon entry, students go through an intake with the teachers to understand why they failed the chapter test and what skills they are deficient in. Based on that information, the teacher provides customized content to help the student gain the skills they need and improve their grade. In preparation for these programs, Laura Clark, a Blended Learning Solutions/District Support, aligned the online math curriculum to the MVHS curriculum and standards. The teachers' focus in Math Triage is to build relationships with their students to help them be successful and feel confident. As Clark emphasized, "Every student is connected to an adult to do targeted skill work and because of that one-on-one time...as of today, 80 of the 281 students who have engaged in Math Triage have increased their math scores. These data are preliminary. The end of our term is January 30th, and we expect this number to increase."

In addition to Math Triage, MVHS implemented the Blended Class approach for seniors who had not met their math requirement and consistently struggled with math. The blended class approach allows students to engage in the online curriculum with additional direct instruction, manipulatives, and hard copy assignments, allowing the teacher to manage both Geometry and Algebra in a single classroom. As an added benefit because of this class, the students are able to take the same assessment that the rest of the students take in their school. Instructor Amy Romero says she is now able to support students where they need it rather than lumping all of the students together. In Fall 2019, twenty students have benefited from the blended classroom approach.

One of the keys to making the programs work was MVHS incorporating them into the school's master schedule, which opened up the FTE, teachers, and time. Word of the two approaches has spread across the district, and McCormick and Clark will be sharing what they've learned with district administrators who have expressed interested in incorporating blended approaches at their schools. McCormick and Clark would like to keep their efforts focused and fine tune processes to ensure advantages before scaling and expanding across the district. "We're doing something right here," said McCormick, "...changing students' minds about themselves as math students and about their abilities."

> **"We're doing something right here ...changing students' minds about themselves as math students and about their abilities."**
>
> – Christie McCormick, Blended Learning Solutions/District Support

Connecting technology and pedagogy for authentic learning

Joliet Public Schools
Joliet, IL

Located in Joliet, Illinois, Joliet Public Schools serves around 11,000 students in 21 schools in grades pre-K–8. About 15% of students are on IEPs, and 95% are considered low income. The district's deep dive into digital learning started in 2004. Today, Joliet has shifted from a device and program-focused approach to an authentic-learning-focused approach to technology integration. As Kim Knigge, Coordinator of Instructional Technology, said, "We are conscious of purposefully embedding technology within the curriculum." John Armstrong, the Director of Technology and Information Services, added, "We've been through a big shift in philosophy whereas before it was 'Hey, we were able to afford to buy this program, so just use it and the kids will get better!' and now it's 'what specific resources and tools do we need to select purposely to give our children to help them achieve?' Before it was more like throwing technology against the wall to see what sticks, and now it's more purposeful selection."

Their district has highly mobile students; thus, everything they do in one building they make sure to do in all of the buildings across the district to ensure there are no opportunity gaps. As Armstrong emphasized, "If we can't do it in all schools, we don't do it in any schools. We're pushing toward the place where 'all' truly means 'all' and incorporating digital content is helping us do that." Digital content is being implemented in all content areas, grade levels, and classrooms. When the district purchases programs and technologies, they make sure they're able to be used by everyone. They are getting away from content-based program, "this is a math program, this is a reading program," and, instead, they are focusing on tools and resources that can be used in many different contexts.

To help their 680–plus teachers navigate all of the tools and resources available to them, Joliet created a Tech Toolbox where tools and resources are organized by categories, such as assessment, blogging, and comics. The tools and resources are then linked to their curriculum map so teachers can understand how to meaningfully integrate digital content or tools into their lessons. "We only have one textbook that we use, and that's not only a textbook but also digital content via a software platform for our math series," said Armstrong. "For everything else, we don't have textbooks. All of our resources are hybrid that we've crafted together meaningfully." Joliet curricular resources are a combination of digital and physical content that has been developed over the last several years. Typically, the district finds that a single source of content, such as a textbook series, does not comprehensively meet the needs of their learners. Each of the district's curricular areas has sought and acquired core and supplemental resources that best address the academic needs of the students to achieve and succeed according to state standards. While many of these resources are purchased or subscribed to, the district has additionally developed its own materials to address these needs. Approved digital resources are frequently hosted by providers but also reside in Google Suite as well as district systems. As Armstrong stressed, "Everything is based on what's best for our student learners. We always begin there, and integrate the resources and materials we believe will make the most significant impact on instruction and achievement."

Teachers can also ask for implementation help from their technology coaches who provide a seamless connection between technology and pedagogy. There is one technology coach assigned to five schools, and each offers two learning sessions per trimester catered to teachers' needs.

ASSESSMENT AND DATA

What they are

Platforms and systems that assess students and display student-level academic data for instructional use at a school or district level. Examples include NWEA MAP and Scantron Performance Series.

Although essentially all online courses include assessments, and display student data, this category is made up of stand-alone tools that assess student understanding of subject-specific topics relative to grade level.

These tools are a key component of some blended and hybrid schools that are focused primarily on understanding the status of each student relative to course goals, content standards, and state assessments.

Assessment and data tools are often used in conjunction with digital content; relatively advanced systems will use student-specific assessment results to point students to digital content in areas in which they demonstrate a need for greater understanding.

Level of engagement

Assessment and data display software are most commonly implemented at a school or district level, to be used by district administrators, school leaders, and classroom teachers. Assessment and data display may be together in a single product, or may be provided by separate companies.

Time and space

Assessment and data display software are used in all types of settings, from online and hybrid schools to traditional classrooms.

Informal diagnostic assessments may also be used at the classroom level by teachers who seek to "take the pulse" of individual students or an entire class.

We are not aware of any reliable usage numbers, and this category as much or more than any other is hard to define. Many teachers use diagnostic assessments in their classrooms, and the level to which those data roll up to school-level data varies by school and over time.

Did you know?

Data display is a growing area of interest of many schools, and some are looking to companies and products that are not limited to education. Parallels exist with health care data, for example, and some companies are developing related systems that work with schools as well as medical facilities.

Students, schools, and course types

Assessment and data display software are most commonly used in math and English at the elementary and middle school levels because these subjects/grade levels have been the focus of high-stakes state assessments. They may be tied to systems that report on non-academic student data such as attendance, free and reduced lunch status, and other data that often correlate with student academic outcomes.

Using data and assessment to improve student outcomes

Beacon Network Schools, Denver Public Schools
Denver, CO

The Beacon Network is made up of two schools—Kepner Beacon Middle School (KBMS) and Grant Beacon Middle School (GBMS)—that are part of the Denver Public Schools district (DPS). Both schools operate as "Innovation Schools" under a Colorado law (the Innovation Schools Act) and recognized as such by DPS and the Colorado Department of Education. Innovation status grants the schools more flexibility than most schools in how they operate with respect to choosing instructional materials, working with teachers, and in other areas. Alex Magaña, Executive Director of the Beacon Network Schools, oversees both schools in the network. He explains the key elements of the schools' success as including:

- Blended learning with technology-based instruction, applications, and assessments.

- A system for frequent analysis of student data.

- Increased instructional time.

- Extensive professional development for teachers.

- An "enrichments" program that involves students in collaborative projects that are unusual in a public school.

The schools assign a laptop to every student, with a main focus on increasing each teacher's knowledge of every student's academic status, with the data rolling up to the school and network level.

Magaña further explains the main differences between Beacon schools and many other schools, such as:

- Grading is based on student mastery of a set of standards and assessments that are created at the network level. This approach creates the foundation for a common data set that the network leadership can use to evaluate performance by individual students, teachers, and schools.

- Much of the content and assessments are delivered online, facilitating the creation, usage, and sharing of student data. Beacon uses Tableau to present student and school outcomes and status. Student data are used to enhance instruction in particular in math and reading. Both subjects receive additional time and extra focus on interventions for students needing extra assistance.

- Online content and the availability of data allows teachers to more easily personalize learning for each student. Magaña stresses that without the content, assessments, and standards all being used across classrooms and schools, this approach would be very difficult.

- Beacon teachers spend more time on professional learning than is typical. Part of the time is on scheduled professional learning days. Students attend for longer days in part to free time for teacher professional learning. In addition, the schools pay stipends to teachers for extra professional learning time. Students overall also spend more time at Beacon schools than in typical DPS schools.

Magaña has not yet found a technology system that meets the school's needs. He and his staff "cobble together" content from a variety of sources, and a staff member uses a spreadsheet to track these systems. In addition, he admits that the goal of having a learning plan for each student is "not yet where we need to be."

Beacon schools use digital content, data, and assessments extensively, and these approaches complement critical non-digital elements of instruction and experiential learning. In particular, Magaña points to "enrichments" in which teachers, parents, staff, and community partners work together to provide new opportunities for students to explore their own areas of interest and curiosity. These enrichments enhance the blended learning approach to create positive student outcomes.

Using data to inform system-wide decisions

Bellevue School District
Bellevue, Washington

Bellevue, Washington, located 10 miles east of Seattle, is a tech hub city. The Bellevue School District (BSD) serves approximately 20,400 students, including Asian (41%), white (34%), Latino (13%), multi-ethnic (9%), and African-American (3%), across 29 brick-and-mortar schools.

BSD uses data to help customize students' learning and experiences at the district level. As Shomari Jones, Director of Equity and Strategic Engagement, emphasized, "Data and assessment are critical for BSD, and we use it as an essential tool to understand where we are presently and also to identify where we'd like to go." BSD has a data team that includes a director, data reporter, and data project manager.

The data team helps to inform the BSD cabinet, which meets regularly to consider how data can inform district, building, and classroom landscapes. Data help the BSD cabinet keep tabs on the district's work toward the five-year strategic planning goals. Additionally, the school board has been on what Jones labeled a "devout data kick, which it hasn't been on before, to ensure we're measuring and capturing information to help inform our work and tell our story. There is nothing in our strategic plan that is not measurable and that doesn't have an expected end-of-year outcome."

District goals include social emotion learning, belonging, support strategies, hiring, family engagement, and cultural relevance in curriculum. While data and assessment have been used at the district level, Jones said "using data at the classroom level is a little newer for us. For the past several years, we've been working to build some intersectionality between the variety of data collection spaces." A staff survey as well as a family survey will be rolled out in 2020 to understand feelings of belonging and connectedness, and these will be cross-referenced with the student data.

Among the most challenging parts of working with data is interoperability. Jones explained, "It's almost traumatizing how many systems we use and how we have to go to each one to tell a different narrative. I've got student information systems that tell me one thing, and this other system tells me the story behind how the students are feeling, and then there are some systems that are collecting data that are not able to be disaggregated by race nor by school, so that's really challenging. Other systems give us data about how students are doing at a micro classroom level, but not one of these systems is talking to the other. And similarly, some of the systems that we're using at the district level are not talking to the ones at the state level, so I think we'll always have some kind of interoperability issue. But it's something that we're working on." BSD's data team offers monthly professional learning opportunities and guidance toward data goals to identify and eliminate gaps in each building, and provide strategies for working within the variety of systems and understanding how to decipher what the data mean. Jones also hopes that BSD will start paying more attention to incorporating student- and family-level data in decision making. "We haven't had a tremendous amount of student voice, which is sad because they are at the source of the experience that we're talking about, and their voices are vital to have in the conversations about how we do education. We will likely start a student advisory board next year to give us input and feedback on decisions we're making and to help us put a story behind the metrics we're seeing."

Course Choice

Course choice (also commonly referred to as "course access") describes a set of state-level policies and programs that allow students to choose an online course from one or more providers, and have their public education funds flow to the online course provider to provide payment. The key element of the policy, as the term suggests, is that students and parents have the right to choose a course, with relatively few restrictions on their options imposed by the state or the student's district of enrollment.

Course choice is one policy strategy to fill a critical need for students who do not have access to a wide range of courses— or access to a specific course they are seeking—within their school. Another common policy strategy to meet shortcomings in available courses is supporting a state virtual school or other programs to provide online courses at below-market rates. In other states, no significant state-level policy exists to address a lack of course availability.

The key elements of course choice are:

- The student chooses one or more online courses from one or more providers.

- The student retains control over the choice with limited restrictions. In much the same way that open enrollment laws allow students to choose schools other than those in their districts of residence, course choice allows students to choose a single academically appropriate course from outside their district of enrollment.

- A significant portion of the student's public education funding (pro-rated to the per-course amount of funding) flows to the provider of the online course.

Key characteristics of specific course choice policies and programs that vary by state include:

- Whether students choose courses through a statewide source such as a common online course catalog, or alternatively find the course and enroll in it via the course provider or another source.

- The reasons that a district can deny a student's choice.

- The recourse that a student has if the district denies the online course.

- Whether students can choose from a single provider or from multiple providers.

- The ways in which course providers are vetted by the state prior to offering courses, if at all.

- How the cost of the course is determined, and in particular whether the state sets a cost per course, or the cost is set by the provider.

- The tracking and reporting that the state does of providers, online course enrollments, and outcomes.

As of school year 2019–2020, 15 states have or are developing some mechanism by which students can choose online courses, but the states vary in significant ways.

The wide variety of experiences in states that have some sort of course choice policy in place suggests that any findings across states must be generalized and will have exceptions. Still, a few observations appear to hold true:
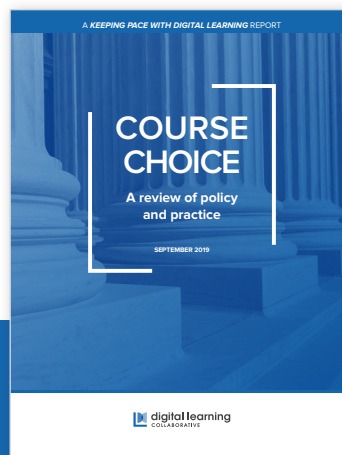
- Course choice policies supported by a state program attract higher levels of enrollments.
- Often a single entity, or a small number of organizations, has an outsize effect on supplemental course enrollments in a state.
- Course enrollment data availability varies widely between states but is mostly lacking.

Three categories of course choice states

We place states into three categories. As with most taxonomies within digital learning, the lines are not completely clear and the value to the taxonomy is in applying a useful framework more than determining with great precision where each state falls.
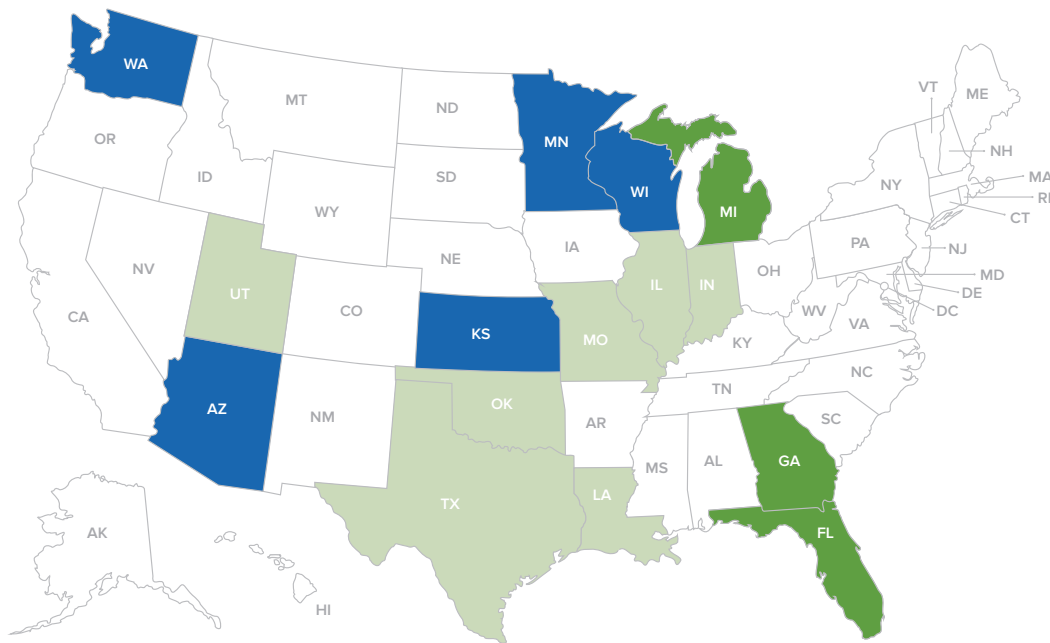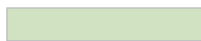

FIGURE 3: **Course choice states**

States that have course choice legislation and a prominent state virtual school that provides online courses

The first category is made up of states that have supported a state virtual school and allow students to choose an online course. These states are significant because they are among the states with the largest numbers of supplemental online course enrollments. Although there is some self-reporting in these data which calls the exact numbers into question, especially from Michigan, there is little doubt that these states are among those with the most supplemental online course enrollments.

States that have course choice legislation or rules and do not have a prominent state virtual school

The second category is made up of states that have passed legislation (or state board rule) that is clearly related to course choice, whether or not the law uses that exact term, and rely on a state-run course choice program and/or districts to provide courses. Utah and Louisiana, both of which have passed well-publicized course choice laws, are in this category. Indiana and Missouri have passed course choice laws more recently and are still developing their programs. The Illinois State Board of Education created a course choice program that will begin piloting in 2020. Although some of these states have a state virtual school, none of these schools are large enough to play a major role with regards to course choice implementation.

States that allow students to enroll part time, in effect allowing them to select a single online course

The third category is made up of states that do not have an explicit course choice policy, but allow students to enroll in a school as a part-time student and have schools that offer online courses. In some cases, these policies have been extended to allow students to choose from online course providers and not just schools. This combination of online course availability and part-time enrollment policy allows students to choose a single online course. Generally, these states allow students to be enrolled in two districts and apportion funding between the districts based on the student's time, courses, or attendance in each district.

eLearning Days

Among the growing uses of digital learning in mainstream districts is the incorporation of eLearning days, also known as cyber days, online learning days, or virtual days, among other terms. eLearning days are used to maintain instruction during unplanned school closures most commonly due to weather (snow, ice, and extreme temperatures), natural disasters, or for other reasons including widespread illness. Some districts are using eLearning days for parent conferences and educator professional development days as well. eLearning days provide districts and their stakeholders an opportunity to continue the learning process and eliminate the need for adding extra days during or at the end of the school year for instructional and/or funding purposes.

During eLearning days, students access online instructional opportunities from home or elsewhere, but not at school. Typically, teachers use a learning management system to post digital instructional materials and assignments, as well as to refer to print materials that students have available at home. Teachers are often required to be accessible in case students have questions, and sometimes teachers conduct an online synchronous class.

This eLearning Days discussion is a summary of the full report from September 2019, which is available on the Digital Learning Collaborative website.

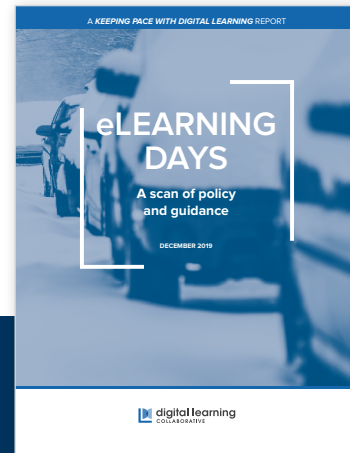**www.digitallearningcollab.com**

eLearning Day Policy

We define eLearning day policies as those that:

- explicitly allow districts to use online resources and instruction for students in traditional schools, to continue instruction during an interruption in physical attendance that affects most or all students,

- allow such instruction to count towards attendance and funding, and

- are based on the district meeting certain requirements that vary significantly by state.

Many states have laws allowing either full-time online schools, the use of supplemental online courses, or both. These policies could potentially be adopted to allow for eLearning days in some cases, but this study does not address these states and policies.

We identified 12 states that have explicit policy and/or guidance allowing districts to use eLearning days to count towards attendance, and an additional four states in which at least one district is using a state waiver or other policy means to implement such days (Figure 4). Some of these states use terms other than "eLearning." For example, Pennsylvania uses the term "Flexible Instruction Days." Although we believe that the states reviewed in this report include most with these policies in place, we did not conduct an exhaustive search and some others may exist. In addition, districts in some states are developing eLearning days, or something similar, in the absence of a formal policy.

Key implementation issues

Policies may allow districts to implement eLearning days, but policies are rarely able to compel a person or entity to do anything well. Some state policies suggest a state oversight role by requiring that districts submit an eLearning day plan, while other policies have no formal review or oversight mechanism. As such, quality assurance and accountability rests largely, or entirely, with schools and districts.

In order to implement eLearning days that result in actual learning, districts must ensure the readiness of teachers to instruct online, students to learn online, and the many components that go into online teaching and learning. The full report includes a list of questions that builds on the state-specific guidelines and provides prompts for reflection for those considering eLearning days for their learning environment.
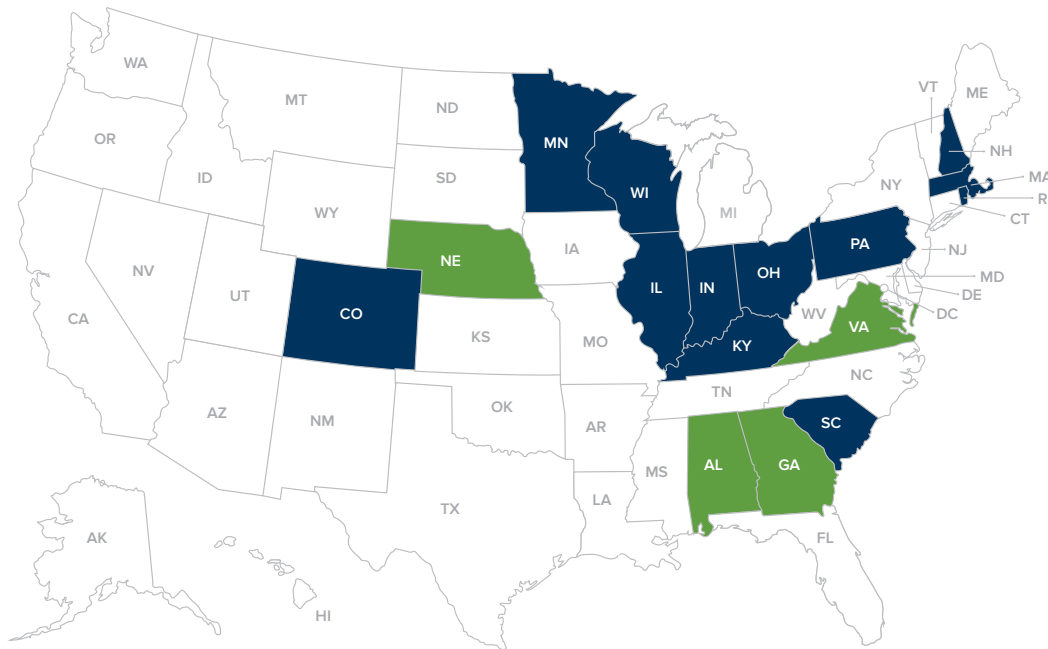

FIGURE 4: **States with eLearning day policy and states with districts using pilots, waivers, or other means to implement eLearning days**

States with eLearning Day policy

Colorado: E-Learning Days

Illinois: Public Act 101-0012

Indiana: IDOE eLearning Day Program

Kentucky: Non-Traditional Instruction (NTI) Program (KRS 158.070)

Massachusetts: Alternative Structured Learning Day Programs

Minnesota: e-Learning Days

New Hampshire: Blizzard bag day

Ohio: Blizzard bag day

Pennsylvania: Flexible Instructional Days

Rhode Island: Virtual Instructional Day Laws and Guidance

South Carolina: 2019 memo from Education Oversight Committee

Wisconsin: Virtual Learning Time for Public Schools

States without formal eLearning Day policy but some eLearning day activity

Alabama: We have not found policy explicitly allowing eLearning Days, but at least one district (Mountain Brook Schools in Birmingham) is implementing them.

Georgia: We have not found policy explicitly allowing eLearning Days but at least one district, Gwinnett County Public Schools, is implementing them, possibly under a law allowing for strategic waivers.

Nebraska: A few districts have received waivers from the state to implement eLearning days.

Virginia: We have not found policy explicitly allowing eLearning Days but at least one district, Virginia Beach, is implementing them.