

# KEEPING PACE WITH

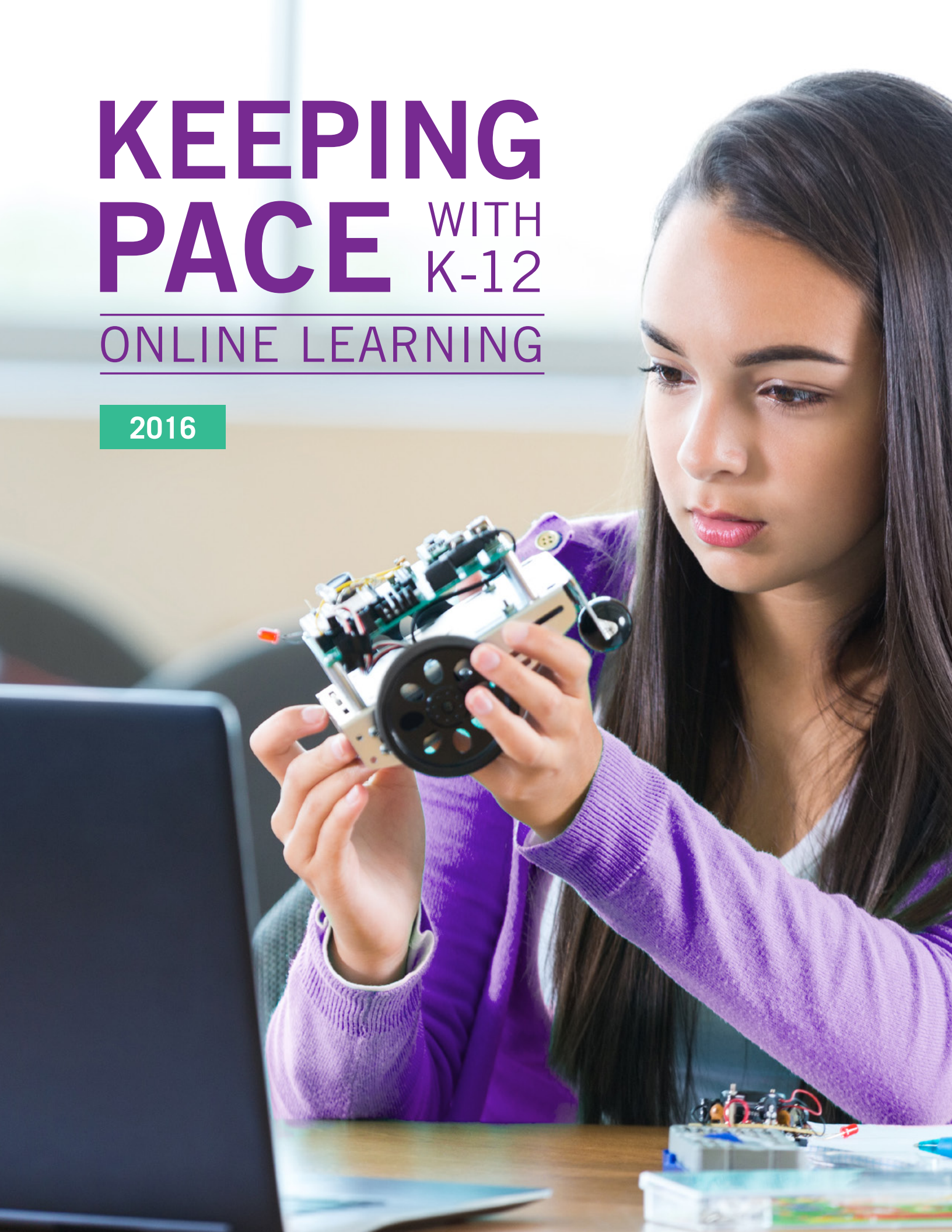
K-12

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ONLINE LEARNING

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2016



2016

# KEEPING PACE WITH K-12

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## ONLINE LEARNING

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For the past sixteen years Evergreen Education Group has been widely recognized as the leading K–12 education online learning research and advisory company. Evergreen delivers digital learning-related insight to state and federal governments, schools and districts, companies and foundations involved in K–12 education.

*Keeping Pace with K–12 Online Learning 2016* marks the thirteenth consecutive year Evergreen has published its annual research of the K–12 education online learning market. Evergreen performs extensive research into all aspects of online, blended and digital learning, examining levels and types of use, best practices, instructional models, instructional impact, and relevant issues, such as policy, staffing, finance, content, tools, and school facilities. Evergreen has been invited to testify or present to state legislatures and agencies, federal agencies, school boards, and corporate boards and executives.

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This report includes several profiles of exemplar programs at online and blended schools, and online course providers. For their additional time and effort we would like to thank Florida Virtual School, North Carolina Virtual Public School, Idaho Digital learning, Montana Digital Academy, Michigan Virtual University/Michigan Virtual School, Indiana Online Academy, Kent Intermediate School District, The Virtual High School, Inc., Wisconsin eSchool Network, Arizona Virtual Academy, Ohio Connections Academy, Gwinnett Online Campus, Clark County School District and the Nevada Learning Academy, Connections Education, Fuel Education, and K12 Inc.

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# Preface

Over the thirteen years of researching, writing and publishing the *Keeping Pace* report, we have seen the online learning space grow and evolve. We have always attempted to anticipate shifts in types and concentration of activity, how practices are changing, evolution of instructional models, and how state policy impacts digital learning.

Throughout this remarkable period of change there has been a constant presence that has become the backbone, supporting the growth and success of online learning—the array of organizations that supply online courses, online teachers, digital content and tools to schools. The number and breadth of types of suppliers has changed and grown as the demand for broader and deeper services has increased. Suppliers range from schools that supply regions or whole states, to stand-alone “intermediate” suppliers that provide online courses and related services to schools, to vendors who develop courses and content and deliver their courses directly to schools or distribute them through intermediaries.

***Keeping Pace with K–12 Online Learning 2016* focuses on these suppliers of online learning and reports on levels and types of activity, including online course enrollments, types of enrollments and number of students involved in online learning.**

Digital learning definitions, sectors, categories and even education institutions involved with digital learning are not naturally and clearly delineated, and as such *Keeping Pace* imposes a general taxonomy on a discipline that is indistinct, chaotic and undergoing constant change. Our classifications are not meant to be 100% accurate or discrete, but are offered to more easily and efficiently explore and explain the field. See Appendix B for definitions of the types of organizations, services and tools that make online learning possible.

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# 1 ONLINE LEARNING IN THE U.S.



ROUGHLY 20 YEARS HAS PASSED SINCE THE WORLDWIDE WEB BEGAN TO BE USED WIDELY, and indeed the oldest K–12 online schools and programs are between 15 and 20 years old. In the late 1990s and early years of the new 2000s two types of online programs grew rapidly. State virtual schools proliferated across the southeastern and midwestern U.S., spurred by the early successes of Florida Virtual School, and in other states including Michigan, Idaho and Georgia. At the same time, online schools grew quickly as the companies like K12 Inc. and Connections Academy launched, spurring growth of online schools in many other states. While Connections and K12 were focused primarily on starting and running their own online schools, other companies like APEX Learning, Aventa (acquired by Fuel Education), E2020 (now Edgenuity), and others began to provide online courses to schools.

Since then, the center of activity and growth has expanded from state-level organizations, such as state virtual schools and online charter schools drawing students across entire states, to individual districts and schools that supply their own online courses. Programs have evolved from being mostly online to frequently combining online and onsite components. As such, a variety of online learning usage and delivery models have evolved. The three examples below describe the basic models of the large majority of digital learning programs.

**Students taking some online courses supplemental to regular classroom instruction.** Millions of students are taking supplemental online courses while attending a physical school. Many of these—the exact number is unknown—are recovering credits. Others are taking advanced, honors, or dual enrollment online courses that are not available as traditional courses. Still others are taking courses that are offered at their physical school, but are taking them online in an extra period, or over the summer, in order to gain scheduling flexibility. The extent to which the student’s enrolling school supports the online courses varies. In some schools the student is supported with a room, computer, and mentor. At the other end of the spectrum, some students take the online courses from home with no support from the physical school. Student success in online courses correlates with local school support.

**Students taking all their courses online.** Hundreds of thousands of students are attending full-time online schools that provide their entire education. Many of these students (perhaps 20%) were formerly homeschooled, but by enrolling in a public online school these students have become public school students. Other students are attending these schools because they have medical or behavioral issues, are engaged in a time-consuming pursuit such as arts or sports, or have not been academically successful in a physical school and are seeking a different mode of instruction. Most full-time online schools are charter schools that enroll students from across entire states, but a growing number are being run by districts or regional service agencies that enroll students from within a defined boundary.

**Hybrid or blended schools combining face-to-face and online instruction.** An unknown number of students are attending hybrid schools that combine a significant amount of online instruction with a significant amount of face-to-face instruction with a teacher or mentor. The same companies supporting full-time online schools run some of these hybrid schools. Other hybrid schools have their roots in alternative education programs that preceded the spread of online courses. These schools often serve students who are at risk of dropping out, or have dropped out of a traditional school and returned to public education via the alternative program.

In addition to these basic models that include a substantial element of online learning, a wide variety of other online and digital learning models have been implemented. For example, many teachers are using digital tools and resources—most of which are online—within regular classroom settings. Such tools include the use of content websites like the National Archives; Google G Suite for Education; countless other software applications for math, reading, and other subjects; classroom management software and learning management systems; and computers, clickers, interactive whiteboards, and other technology products in physical classrooms. The most successful of these educational applications have greatly enhanced instructional models and practices, while providing greater access and equity.

While the various delivery models and program types have, and continue to evolve and change, one constant has been the wide variety of suppliers of online content, tools, professional learning and other related services. This *Keeping Pace* report focuses on understanding the layers and their relationships in the universe of suppliers and users, illustrated below.

For online and digital learning, we define suppliers as entities that provide online and digital learning products and services to schools, and sometimes directly to students, but usually coordinated and monitored by a school. A supplier is not responsible for a student's academic activity and performance and is not authorized to do so. As such, suppliers do not own the transcript of a student, administer state assessments, assign grade levels, or offer diplomas. Some suppliers, such as most state virtual schools and some vendors, offer courses that include the online teacher, who is usually employed by the supplier, but it is the student's home school that maintains ultimate responsibility for the student. The supplier, offering the online course and perhaps the teacher, is essentially a contracted outsource provider of instructional services to a school. Only authorized schools can grant credit towards grade level advancement and confer diplomas.



# 2 WHO ARE THE SUPPLIERS OF ONLINE LEARNING COURSES AND SERVICES?



WHERE DO THE ONLINE COURSES, CONTENT, TECHNOLOGY AND OTHER SERVICES THAT HAVE SUPPORTED THIS DRAMATIC INCREASE IN ONLINE OPTIONS AND ACCESSIBILITY FOR STUDENTS COME FROM? Some schools and districts develop online resources internally, but the vast majority of schools use online courses, technology and services from a continuum of suppliers. **Suppliers** are operational entities that deliver online courses, content, instruction, technology tools and other online learning related products and services to schools. They may be companies, governmental agencies, or nonprofits. Suppliers can be very large corporations—publishers like Pearson or McGraw-Hill—that offer a very wide variety of digital learning products and services, or smaller suppliers so specialized that their products might, for example, be limited to online speech therapy, health and physical education or driver’s education.

Some suppliers specialize in specific instructional content areas of school need like credit recovery programs, world languages or mathematics. Others furnish products and services needed to support and manage an online learning program, such as course delivery and management platforms, assessment systems, and learning analytics. Many provide professional development for teachers and administrators specific to digital learning.

In many states, intermediate providers are one of the first resources schools use to access online courses. **Intermediate suppliers** are usually organizations within a state that have been established to provide a full-service, coordinated offering of online courses and associated services directly to schools. Intermediates may redistribute courses and other products from vendors, develop their own courses, create and provide support and professional development services, and deliver them to schools using commercially available learning management systems and other educational platforms. This unified offering provides a valuable service to schools, relieving them from having to directly manage, integrate and support a variety of products and services from a multiplicity of vendors and other providers. Intermediates are most often some form of governmental or government controlled entity, such as a coordinated nonprofit like a state virtual school, regional services agency, or perhaps a consortium or membership organization specifically established to cooperatively provide online services to a group of schools or its members.

**Vendors** are companies or organizations in the business of developing and delivering a broad range of products and services to the education industry. In particular, for the general focus of this report, vendors provide online courses, surrounded by a broad range of related digital content, tools and support services. Vendors are usually national or worldwide in scope and directly serve schools at the local, regional and state level, as well as work with intermediate distributors and product and service aggregators. As a service offering some even maintain a staff of teachers as part of a full services offering of online teacher-led courses. Some vendors also deliver online learning directly to students.

FIGURE 1  
**Online learning products and services supply chain**

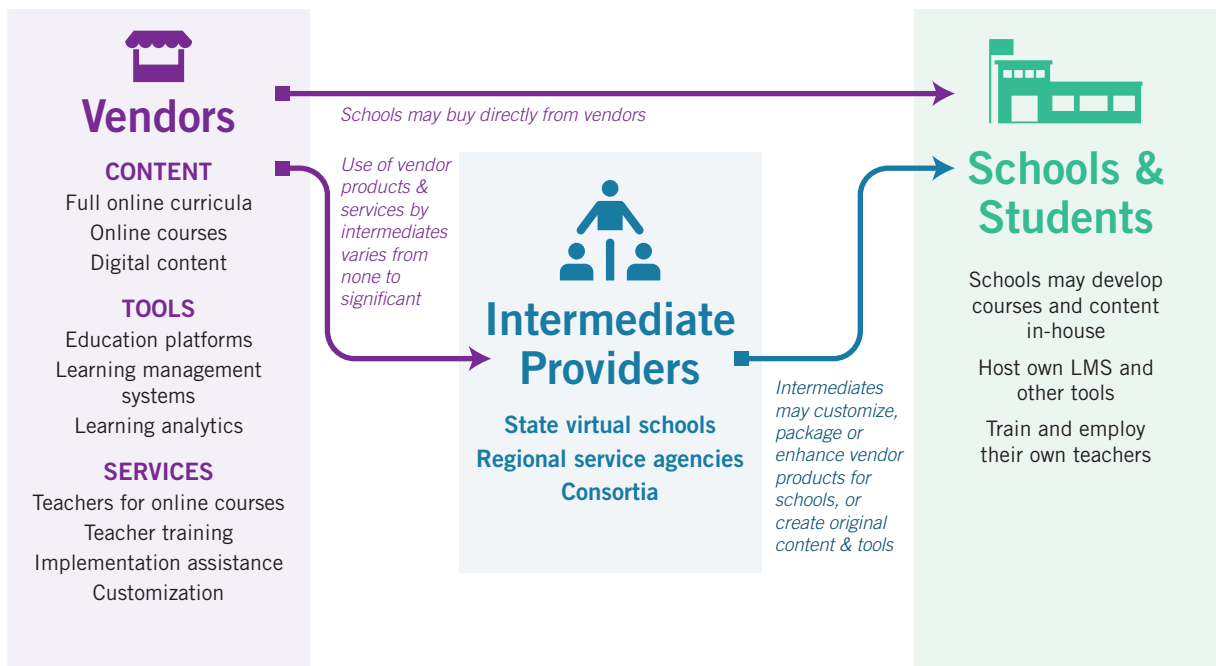


Figure 1 illustrates the supply chain of online courses, instruction and technology tools from vendors to schools and students. It shows how vendor products can travel to schools through intermediate suppliers. Schools and districts often work directly with vendors for a “turnkey” solution, an offering delivered by a supplier that comprises everything a school needs for an entire online program. Schools may choose to work through intermediates. The regional focus of most intermediates allows them to build close relationships with schools and districts, and intermediates usually have a thorough understanding of state rules, funding and other local issues that might impact online learning. Geographic proximity allows intermediates to provide face-to-face services that vendors may not be able to easily provide. Depending on state policy, schools have the flexibility to use whatever supplier they please. However, selection of a supplier may be influenced to some extent by funding sources for online courses, a state approval process for suppliers, or the availability of a state virtual school or other intermediate supplier. State agency oversight and services impacting online learning are covered in greater detail later in this report.

Schools and districts are increasingly developing their own online courses, as well as amassing the technology infrastructure to deliver them, but outside of larger school districts, most rely on suppliers for the majority of their online courses and support services.

Vendors and intermediates work together in many ways. Intermediates may license vendor products and services and, in turn, use those online courses, instruction and technology to package a full-services offering to schools. Vendor courses can be customized and enhanced by intermediate suppliers. For example, Florida Virtual School, the country’s largest and oldest state virtual school, partners with Pearson’s Connections Academy to provide full-time online options for students in Florida. Some state virtual schools supply select courses to virtual charter schools.

There is a large and rapidly expanding number of suppliers of digital learning products and services for K-12 schools, chasing the growth rate of the digital products and Internet industries themselves. The different shapes and forms of suppliers are as varied as the enormous range of products and services they provide. The good news is that there is very little a school needs that isn’t available from one, and usually several suppliers. The bad news is, that it is becoming harder and harder for schools to sort out and make sense of the huge fabric of offerings. The role of intermediates as well as state agency involvement helps to organize and provide order for schools.

## Intermediates

Most intermediates focus on supplying online learning and related services to schools within their states, or a major region within the state. Intermediates may be state virtual schools, regional service agencies, districts that provide online courses statewide or regionally, or a consortium of schools or districts. It varies by state, but most often one type of intermediate is dominant. A state virtual school is often the dominant intermediate provider, like Florida, North Carolina and Alabama. Or it might be a regional service agency, like Indiana and New York. Intermediates are usually public education entities or closely controlled nonprofits, directly related to the state education or other governmental agency. Historically, intermediates were some of the earliest suppliers of online options to schools, from state virtual schools like Florida Virtual School (1997), to a member-based consortium like the Virtual High School (1996).

Intermediates provide comprehensive services to deliver a fully supported online program to schools. They,

- Maintain an operational entity with a staff engaged in the integration of online learning products and services that they, in turn, deliver to schools on a turnkey basis,
- Coordinate with schools (usually through site coordinators in each school) to directly enroll students and monitor course activity,
- Employ and train highly qualified, state certified online teachers,
- Provide technology necessary to deliver online courses and perform critical administrative functions, and
- Train and work with school and district staff to manage and administer all aspects of the online learning program.

Multiple intermediates could be operating in a single state simultaneously. For example, Florida has the largest state virtual school, Florida Virtual School (FLVS), full-time online schools through vendor partnerships with FLVS, district programs that provide courses to other districts across the state, and consortia that provide courses to member districts. Michigan also has a large state virtual school, but schools also have access to online learning through a statewide consortium of districts and at least one regional service agency program. In South Carolina districts access online courses through the state virtual school, VirtualSC, or participate in a district franchise program managed by VirtualSC. South Carolina also has virtual charter schools that provide full-time options for students and a few districts independently operate digital learning programs.

Although vendors are major suppliers of online learning to schools, intermediates play a critical role not only in delivering online courses, but addressing school needs and state requests that may be too specialized or small of a market for most vendors to support. Because intermediates have a state rather than national focus, intermediates are often called upon to meet specific needs identified by the state. For example, Virtual Arkansas, the state virtual school, responded to the governor's request to make online Computer Science available at no cost to any student in the state. Michigan Virtual University, the organization that runs Michigan Virtual School, was tasked with developing and maintaining the Michigan Online Course Catalog to provide course access to supplemental online courses for students statewide.

# State Virtual Schools

State virtual schools are an important part of the online learning landscape, serving over 523,000 students in about 935,000 supplemental online course enrollments during the 2015–16 Fiscal Year (FY). They are one of the largest and most recognized intermediate suppliers to schools, delivering online courses, instruction, technology infrastructure, professional development and other online learning related services to schools and districts across the states in which they operate.

**State virtual schools** are operational intermediate supplier organizations that provide online learning programs to schools statewide. State virtual schools were created by legislation or by state level agencies, usually funded partially or entirely by a state appropriation or grant. State virtual schools are not actually “schools” in the traditional sense. They supply online courses and related services to schools, but with only a few exceptions, state virtual schools do not grant diplomas and are not responsible for the functions performed by schools (re. administration of state assessments, state and federal reporting, counseling, etc.). Students are usually enrolled with district approval, with the exception of states with course access policies that allow students to directly take one or more online courses from a provider other than the student’s district of enrollment and have their funding flow to the provider. Even then the school or district plays an integral role in counseling, mentoring and enrolling students in the state virtual school.

State virtual schools can be administered by a state education agency, but can also be separate nonprofit organizations, charter schools, higher education institutions and even regional service agencies contracted by the state education agency to operate the state virtual school.

- Georgia Virtual School, Oregon Academy of Online Learning, Virtual Virginia and other state virtual schools are part of their state departments of education.
- Idaho Digital Learning (IDL) is not part of the state department of education, but rather a separate governmental entity created by legislation with a Board of Directors responsible for oversight.
- Montana Digital Academy is administered by the state university system.
- Michigan Virtual School receives legislative funding, but is a 501(c)3 nonprofit organization with a Board of Directors providing oversight.
- Illinois Virtual School is administered through the Peoria County Regional Office of Education, which was awarded the Illinois State Board of Education contract to manage and operate the state virtual school.
- New Hampshire’s state virtual school, Virtual Learning Academy Charter School, was created through charter school rules.

State virtual school courses and services are provided to schools at no cost, or for nominal fees to help cover costs. State virtual schools also sometimes receive federal or private foundation grants.

State virtual schools have similar characteristics; they provide teacher-led online courses, have dedicated staff, enroll students, hire and train teachers, and maintain technology infrastructure to deliver and support online courses. They may also create their own online course content, license content from vendors, use open educational resources, or combine content from various sources.

TABLE 1

## State virtual schools

| State          | Main office city | State virtual school                    | Year opened | Staff FTE | Operating budget | Grades served | No. of schools served |
|----------------|------------------|---|-------------|-----------|------------------|---------------|-----------------------|
| Alabama        | Montgomery       | ACCESS Alabama                          | 2004        | 9         | 19,865,768       | 7–12          | 405                   |
| Arkansas       | Plumerville      | Virtual Arkansas                        | 2013        | 7         | 5,040,000        | K–12          | 258**                 |
| Colorado       | Wheat Ridge      | Colorado Digital Learning Solutions     | 2002        | 2         | 412,427          | 6–12          | 38                    |
| Florida        | Orlando          | Florida Virtual School                  | 1997        | 385       | 197,154,877      | K–12          | 3,227                 |
| Georgia        | Atlanta          | Georgia Virtual School                  | 2005        | 40        | 10,958,753       | 6–12          | 549                   |
| Hawaii         | Honolulu         | Hawaii Virtual Learning Network         | 2007        | NR*       | NR*              | 7–12          | NR*                   |
| Idaho          | Boise            | Idaho Digital Learning Academy          | 2001        | 41        | 9,700,000        | 5–12          | 304                   |
| Illinois       | Edwards          | Illinois Virtual School                 | 2003        | 7         | 2,300,000        | 5–12          | 251                   |
| Iowa           | Des Moines       | Iowa Learning Online                    | 2004        | 6.75      | 1,500,000        | 9–12          | 190                   |
| Michigan       | Lansing          | Michigan Virtual School                 | 2001        | 16        | 8,100,000        | 6–12          | 514                   |
| Mississippi    | Jackson          | Mississippi Virtual Public School       | 2006        | NR*       | 600,000          | 9–12          | 127                   |
| Missouri       | Jefferson City   | Missouri Virtual Instructional Program  | 2007        | 2         | 390,000**        | K–12          | NR*                   |
| Montana        | Missoula         | Montana Digital Academy                 | 2010        | 5.1       | 1,838,370        | 6–12          | 195                   |
| New Hampshire  | Exeter           | Virtual Learning Academy Charter School | 2007        | 7         | 5,916,833        | 6–12          | 364                   |
| New Mexico     | Santa Fe         | IDEAL–New Mexico                        | 2008        | 6         | 890,000          | 6–12          | 121                   |
| North Carolina | Raleigh          | North Carolina Virtual Public School    | 2007        | 25        | 23,471,888       | 6–12          | 945                   |
| North Dakota   | Fargo            | North Dakota Center Distance Learning   | 1996        | 15        | 5,100,000        | 6–12          | 327                   |
| Oregon         | Salem            | Oregon Academy of Online Learning       | 2005        | 0.9       | 400,000          | 6–12          | NR*                   |
| South Carolina | Columbia         | VirtualSC                               | 2006        | 24        | 8,284,727        | 6–12          | 417                   |
| Utah           | Salt Lake City   | Utah Electronic High School             | 2004        | 2         | 1,013,441        | 6–12          | 245                   |
| Vermont        | Bennington       | Vermont Virtual Learning Cooperative    | 2010        | 3.75      | 544,650          | 7–12          | 61                    |
| Virginia       | Richmond         | Virtual Virginia                        | 2002        | 4         | 4,200,000        | 6–12          | 331                   |
| West Virginia  | Charleston       | West Virginia Virtual School            | 2000        | NR*       | NR*              | 6–12          | 720**                 |
| Wisconsin      | Tomahawk         | Wisconsin Virtual School                | 2000        | 4.80      | 1,375,000        | 6–12          | 256                   |

\*NR = Not reported

\*\* 2014–15 data

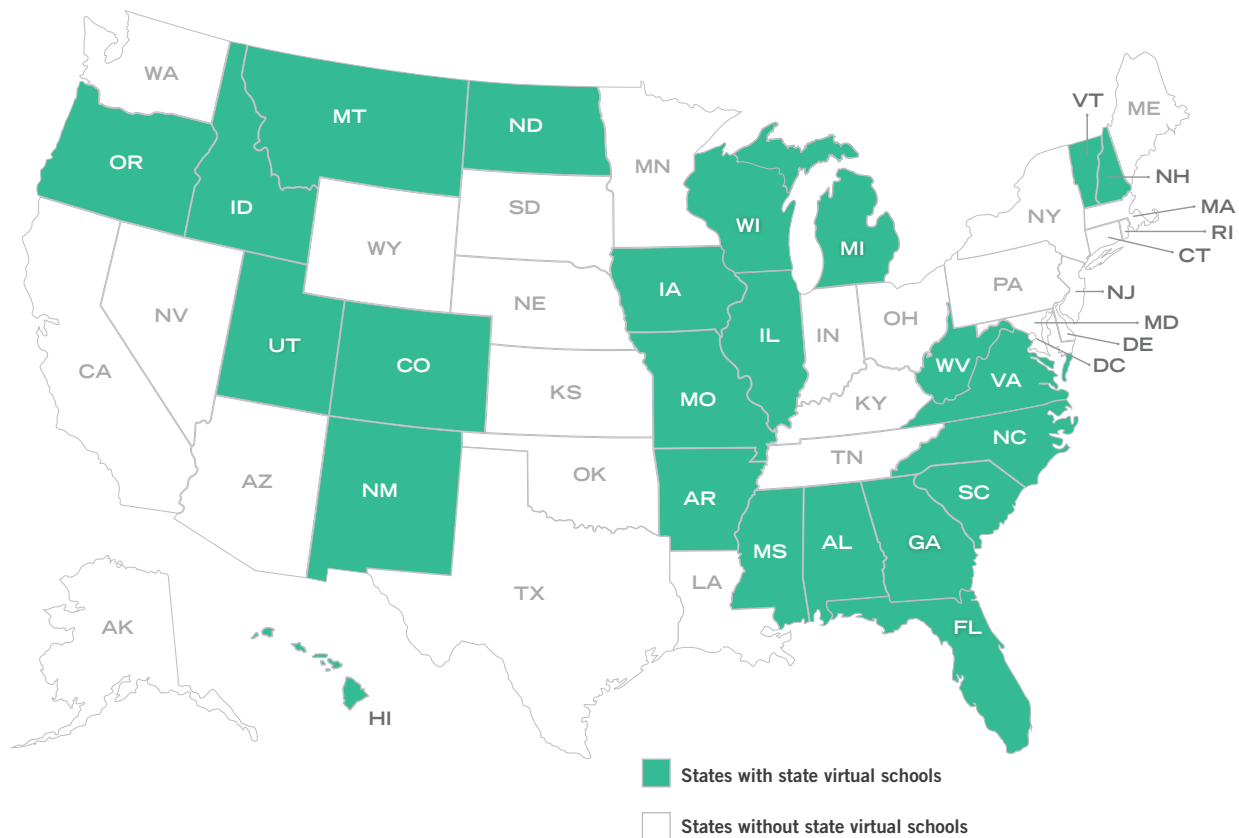


## State Virtual Schools by the Numbers

Not long ago, state virtual schools were the largest suppliers of supplemental online courses to schools and districts. Online courses now come from various suppliers, but state virtual schools are still one of largest providers in the 24 states in which they operate. State virtual school success has often been viewed in terms of the total number of online course enrollments, but *Keeping Pace* reports on state virtual school metrics that go beyond course enrollments and give a more complete picture of this key supplier.

FIGURE 2

### States with state virtual schools



Alaska, Texas and South Dakota previously were states designated as having state virtual schools in *Keeping Pace*. Oregon is newly recognized as a state virtual school.

TABLE 2

## State virtual schools course enrollments over the last four years

| State  | State virtual school                    | 2012–2013      | 2013–2014      | 2014–2015      | 2015–2016      |
|--|---|----------------|----------------|----------------|----------------|
| Alabama  | ACCESS Alabama                          | 51,910         | 51,809         | 41,578         | 57,485         |
| Arkansas   | Virtual Arkansas                        | 2,000          | 3,734          | 29,728         | 29,213         |
| Colorado   | Colorado Digital Learning Solutions     | 1,007          | 914            | 705            | 433            |
| Florida  | Florida Virtual School                  | 410,962        | 377,508        | 394,712        | 471,576        |
| Georgia  | Georgia Virtual School                  | 25,877         | 33,041         | 52,290         | 66,460         |
| Hawaii   | Hawaii Virtual Learning Network         | 1,834          | 1,514          | 1,358          | 1,502          |
| Idaho  | Idaho Digital Learning Academy          | 19,036         | 20,820         | 22,954         | 25,488         |
| Illinois   | Illinois Virtual School                 | 2,994          | 3,097          | 4,681          | 6,493          |
| Iowa   | Iowa Learning Online                    | 1,240          | 1,201          | 1,294          | 2,975          |
| Michigan   | Michigan Virtual School                 | 20,812         | 21,944         | 23,716         | 24,397         |
| Mississippi  | Mississippi Virtual Public School       | 3,121          | 2,360          | 2,262          | 4,319          |
| Missouri   | Missouri Virtual Instructional Program  | 1,623          | 1,992          | 623            | 1,639          |
| Montana  | Montana Digital Academy                 | 7,993          | 6,785          | 7,111          | 6,946          |
| New Hampshire  | Virtual Learning Academy Charter School | 17,626         | 22,731         | 24,724         | 27,717         |
| New Mexico   | IDEAL–New Mexico                        | 2,697          | 2,823          | 2,199          | 2,442          |
| North Carolina   | North Carolina Virtual Public School    | 94,716         | 104,799        | 111,634        | 116,006        |
| North Dakota   | North Dakota Center Distance Learning   | 3,200          | 6,100          | 5,414          | 5,264          |
| Oregon**   | Oregon Academy of Online Learning       |                |                |                | 983            |
| South Carolina   | VirtualSC                               | 16,818         | 24,491         | 40,363         | 41,666         |
| Utah   | Utah Electronic High School             | 10,308         | 4,741          | 6,965          | 7,985          |
| Vermont  | Vermont Virtual Learning Cooperative    | 940            | 2,707          | 1,693          | 2,229          |
| Virginia   | Virtual Virginia                        | 13,026         | 19,433         | 24,611         | 25,600         |
| West Virginia  | West Virginia Virtual School            | 6,039          | 11,270         | 10,428         | NR*            |
| Wisconsin  | Wisconsin Virtual School                | 5,036          | 5,357          | 5,511          | 6,150          |
| <b>TOTAL semester equivalent course enrollments served</b> |   | <b>720,815</b> | <b>731,171</b> | <b>816,554</b> | <b>934,968</b> |

\* Not reported

\*\* First year operating as a state virtual school was SY 2015–2016

State virtual schools had a year-over-year growth rate in course enrollments of 14.5% in FY 2015–16. Most state virtual schools showed continued growth. The state virtual schools in Alabama (38%), New Hampshire (12%), Georgia (27%) and Illinois (39%) all saw double-digit growth in the 2015–16 FY. Although a relatively small program, Iowa more than doubled its course enrollment number with a 130% increase. Florida Virtual School, by far the largest state virtual school in the country, had a second consecutive year of growth with a 19.5% increase in course completions in the 2015–16 FY. The second largest state virtual school, North Carolina Virtual Public School, continued its steady growth pattern with a 4% increase in course enrollments and a 22.5% increase over the past three years.

TABLE 3

### Number of students taking online courses from state virtual schools

| State          | Virtual School Name                     | Number of students who took classes <sup>1</sup> | Total course enrollments | Average courses per student <sup>3</sup> |
|----------------|---|--|--------------------------|--|
| Alabama        | ACCESS Alabama                          | 25,261   | 57,485                   | 2.28                                     |
| Arkansas       | Virtual Arkansas                        | 16,834 <sup>2</sup>                              | 29,213                   | 1.74                                     |
| Colorado       | Colorado Digital Learning Solution      | 296  | 433                      | 1.46                                     |
| Florida        | Florida Virtual School                  | 290,456  | 471,576                  | 1.62                                     |
| Georgia        | Georgia Virtual School                  | 30,374   | 66,460                   | 2.19                                     |
| Hawaii         | Hawaii Virtual Learning Network         | NR*  | 1,502                    | –  |
| Idaho          | Idaho Digital Learning Academy          | 15,973   | 25,488                   | 1.60                                     |
| Illinois       | Illinois Virtual School                 | 4,427  | 6,493                    | 1.47                                     |
| Iowa           | Iowa Learning Online                    | 2,641  | 2,975                    | 1.13                                     |
| Michigan       | Michigan Virtual School                 | 14,465   | 24,397                   | 1.69                                     |
| Mississippi    | Mississippi Virtual Public School       | 1,940  | 4,319                    | 2.23                                     |
| Missouri       | Missouri Virtual Instructional Program  | 714  | 1,639                    | 2.30                                     |
| Montana        | Montana Digital Academy                 | 4,023  | 6,946                    | 1.73                                     |
| New Hampshire  | Virtual Learning Academy Charter School | 13,196   | 27,717                   | 2.10                                     |
| New Mexico     | IDEAL–New Mexico                        | 1,639  | 2,442                    | 1.49                                     |
| North Carolina | North Carolina Virtual Public School    | 36,454   | 116,006                  | 3.18                                     |
| North Dakota   | North Dakota Center Distance Learning   | 2,487  | 5,264                    | 2.12                                     |
| Oregon         | Oregon Academy of Online Learning       | 601  | 983                      | 1.64                                     |
| South Carolina | VirtualSC                               | 24,792   | 41,666                   | 1.68                                     |
| Utah           | Utah Electronic High School             | 8,517  | 7,985                    | 1.88 <sup>4</sup>                        |
| Vermont        | Vermont Virtual Learning Cooperative    | 1,171  | 2,229                    | 1.90                                     |
| Virginia       | Virtual Virginia                        | 11,790   | 25,600                   | 2.17                                     |
| Wisconsin      | Wisconsin Virtual School                | 3,200  | 6,1501                   | 1.92                                     |
| <b>TOTALS</b>  |   | <b>511,251</b>                                   | <b>934,968</b>           | <b>1.84 (Weighted average)</b>           |

(1) Number of students who took one or more online courses from a state virtual school (students are not double counted if they took more than one course)

(2) Exact count unavailable. Estimated number of students calculated based on weighted average of reporting SVSs

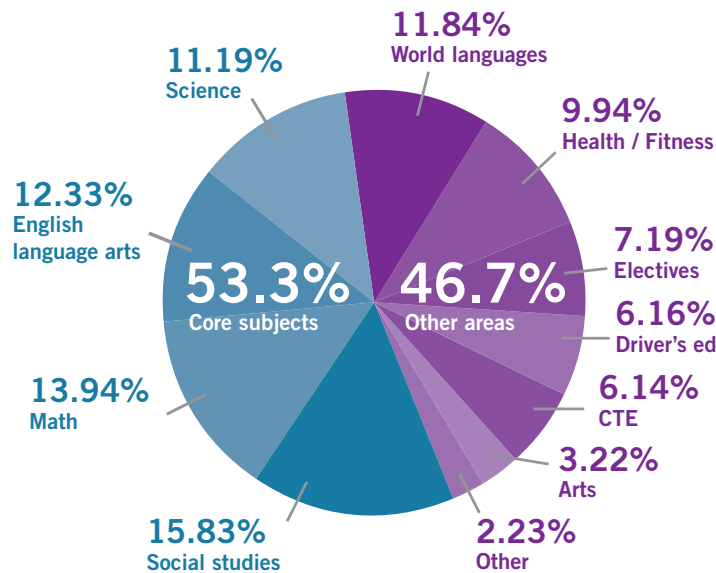
(3) Average number of semester equivalent courses taken by students during the fiscal year

(4) Based on 8,517 students taking 15,970 quarter courses (7,985 semester-equivalent courses)

Note: West Virginia Virtual did not report data for FY 2015–16.

Table 3 shows the number of students taking online courses in state virtual schools, ranging from 290,456 students in Florida Virtual School during the 2015–16 FY to as few 300–700 students in some of the smaller programs. Based on 22 of the state virtual schools providing data, students took on the average 1.8 online courses in the 2015–16 FY. Student online course loads vary from program to program. NCVPS had the highest course load at 3.18 courses per student, largely due to a focus on year-long course enrollments. Virtual Virginia also emphasizes year-long courses, plus it is running a full-time online pilot contributing to an above national average 2.17 courses per student. Several of the smaller programs—Iowa (1.13), Illinois (1.47), New Mexico (1.49)—run below the national average.

FIGURE 3  
**Course enrollments by subject area**  
 State virtual schools



*Twenty-one of the twenty-four state virtual schools reported detailed data on course enrollments by subject area.*

**Course enrollments by subject.** Collectively, the core subjects of math, science, language arts and social studies combine for about 53% of course enrollments in FY 2015–16, down from 56% the previous year (figure 3). The largest increase in any single category was in World Languages, accounting for 11.84% of all course enrollments after tallying just 5.93% of course enrollments in 2014–15. The cost and difficulty of finding qualified World Language teachers for campus-based courses is driving many districts to rely on online learning options.

State virtual schools and other suppliers are being asked to create full class sections of online World Language courses to meet the shortfall in qualified local teachers.

There was also a significant increase in Health and Fitness at 9.94% of all course enrollments in FY 2015–16 compared to 3.53% in 2014–15. Driver's Education comprised 6.16% of course enrollments in FY 2015–16. Only 2.23% of enrollments were reported in categories that did not logically fit into the more standard course designations.

## FLORIDA VIRTUAL SCHOOL

# Students outperform state average in end-of-course exams

Florida Virtual Florida Virtual School (FLVS) is both the oldest statewide Internet-based school and certainly the largest, successfully serving 290,000 students collectively through FLVS Flex and FLVS Full Time programs in FY 2015–16. FLVS students bested the state average in End-of-Course (EOC) exams taken by Florida students in spring of 2016. The benchmark tests measure how well students have mastered course material. As the state requires more EOC assessments, students in FLVS Part-Time and FLVS Full-Time programs continue to surpass the average set by students in traditional schools.

Based on May 2016 Advanced Placement (AP) Exams, FLVS students also outperformed state overall averages by 7.8 percent in comparing the 15 AP course offered by FLVS, and scored above the state qualifying AP average in 12 of the 15 courses. ■

**End of course assessment comparison**

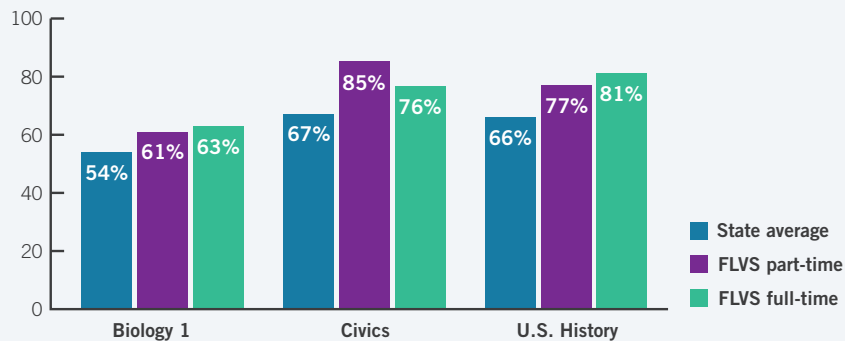


FIGURE 4

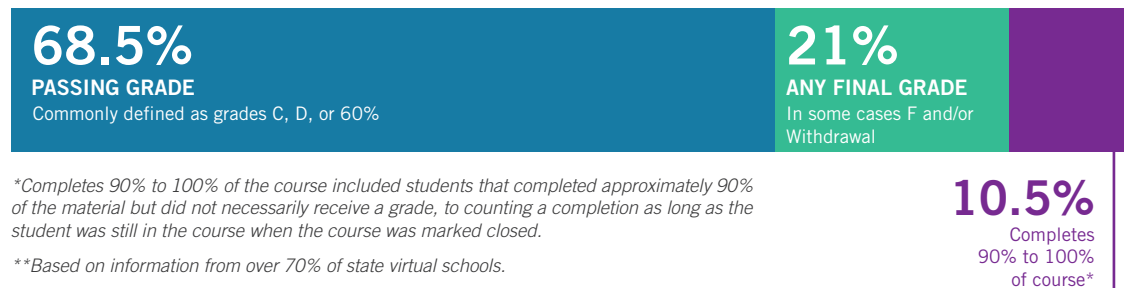
### State virtual school course enrollments by grade level



**Course enrollments by grade level.** State virtual schools began providing supplemental courses primarily at the high school level, and about 84% of all state virtual school course enrollments remain in grades 9–12. Serving middle school grades has been a more recent development, and as such the rate of growth in these lower grades is faster than the traditional high school segment. All but two of the 24 state virtual schools now serve grades 6–12 or 7–12 with two programs offering courses for grades 5–12. Among the state virtual schools reporting course enrollments by grades were some of the largest and oldest, including Florida Virtual School, North Carolina Virtual Public School, ACCESS Alabama, Georgia Virtual School and Idaho Digital Learning. Florida Virtual reported 38,473 course completions in K–5, practically the entire K–5 enrollment among state virtual schools.

FIGURE 5

### State virtual schools course completion criteria



**Completion rates.** Most state virtual schools defined course completion based on a passing grade, most commonly defined as grades C, D, or 60% or higher. Florida Virtual School, which is funded on course completions, not enrollments, defines a completion as a student that successfully completes a virtual school course with a D or higher. Several state virtual schools require a grade of 70% or above for a completion. A few define course completion as any final grade issued, including an F and even Withdrawal. A small percentage of state virtual schools accept a student completing 90–100% of a course as a completion and did not require that a grade to be issued. Another counts an online course as completed if the student was still in the course when the course was marked closed on the closing date.



**Schedule configurations.** One of the primary reasons state virtual schools were created was to give students access to courses unavailable in the traditional setting. An emerging trend among state virtual schools, as well as other online learning suppliers, is to provide a wider range of flexible scheduling options beyond the traditional two-semester and summer school schedules to maximize access for students. Today, scheduling options range from traditional semester courses and block schedules, to open enrollment (register at anytime) and rolling enrollments with multiple start dates. For example, Iowa Learning Online adheres to the tradition fall, spring, summer semester enrollment schedule, while Illinois Virtual School offers fixed terms of various lengths (8-, 10-, 13-, and 17-week terms) plus 10-week open enrollment courses for credit recovery. ACCESS Alabama offers year-long courses covering semesters, both single semester and trimester schedules, and block and half-block options.

**Teacher type and compensation.** Most state virtual schools have come to rely heavily on part-time teachers to staff online courses. Seventeen of the 19 state virtual schools reporting data on teacher type rely more on part-time teachers than full-time instructors. Eight programs employ no full-time teachers, exclusively using part-time instructors. Florida Virtual School is the notable exception with 1,380 full-time teachers and about 90 part-time.

Since almost all online courses delivered by state virtual schools are teacher-led, the primary factor in determining annual budget requirements is teacher compensation. Part-time or adjunct teachers are typically paid on a per enrollment basis, generally ranging from about \$130 to over \$200 per enrollment, based on factors such as experience and type of course. Full-time teachers are typically paid in a similar way and on similar scales as teachers in the traditional schools in their state.

**Sources of online courses.** State virtual schools get their online courses from a wide range of sources. Some state virtual schools, like Missouri Online Virtual Program and West Virginia Virtual, rely largely on vendor supplied courses and services, often including vendor-provided online teachers. Others like Florida Virtual School, Alabama's ACCESS, Idaho Digital Learning, and Georgia Virtual School largely develop their own original course content. Illinois Virtual School, Montana Digital Academy and others combine original development with vendor courses to provide a complete course catalog.

## NORTH CAROLINA VIRTUAL PUBLIC SCHOOL

### Occupational Course of Study

The North Carolina Virtual Public School (NCVPS) Occupational Course of Study (OCS) program is a collaborative effort between the NCVPS online teacher and the face-to-face OCS teacher on the school campus. NCVPS OCS courses require a co-teaching experience where the face-to-face teacher is driving the instructional decisions while working daily with the online teacher to best use the online content provided by NCVPS. The NCVPS online teacher helps the classroom teacher individualize and differentiate instruction for each student, while the teacher delivers real-time instruction. The classroom teacher uses the online content, her/his own resources, and collaborates with the online teacher to determine the best way to teach the content to the student. The online OCS teacher is available to the student outside of campus time if needed, although most contact is scheduled through the classroom teacher who is present during the student interaction. OCS course enrollments have grown from 1,000 during the program's first semester (2010) to over 18,189 by the Spring 2016. ■



## *The Evolution of State Virtual School Services*

Since around 1997, state virtual schools have been some of the early pioneers in online, providing online learning options to supplement a student’s learning in the traditional school setting. Over the past decade plus, state virtual schools have significantly expanded the types of services and range of products offered, while maintaining the traditional role of supplemental online course supplier. Innovative state virtual schools are now introducing and managing change in the delivery online learning services.

Supplemental online courses are still at the heart of the state virtual school mission, but most state virtual schools provide a variety of other value-added services to meet the changing needs of schools and students. They work with districts to provide access to online curriculum, technology infrastructure and teacher training to expand blended learning opportunities in the classroom. Many have expanded offerings in college and career readiness courses and tools, addressing state and local concerns over preparing students for life after high school. Some examples of the expanding services provided by state virtual schools include the following.

- VirtualSC offered online keyboarding for 34,368 South Carolina students in grades K–12 across 35 school districts in FY 2015–16. It also works with five high schools to provide Virtual Learning Centers across the state for students to receive support from certified teachers, mentors and robots. VirtualSC started using five robots in 2014, further expanding the instructional reach of the program.
- Virtual Virginia is in the second year of piloting a “full-time” program of 100 students in grades 9–12. The full-time student pilot may give schools an option to offer resident students looking for full-time online learning while remaining part of the local school district. Virtual Virginia is providing supplemental online courses to fill each student’s full class schedule while the student remains enrolled in their local school division. Students register through local public school counselors and with the approval of parents and school administration. Students receive diplomas from the resident school and take state assessments at the local school.
- Idaho Digital Learning (IDL), in collaboration with the Idaho Career & Technical Education, has developed Skillstack, a badging/micro-certification platform that allows educators to validate the skills in which their students demonstrate proficiency, leading to industry-relevant badges. The goals are to document, assess, and validate student skills utilizing industry and disciplinary defined standards to create a wider talent pool for Idaho employers, and to assist with the articulation of credit from secondary career and technical education programs into Idaho’s colleges and universities.
- Virtual Arkansas is offering art courses to students in grades 10–12 through a partnership with Crystal Bridges Museum of American Art, making the arts more accessible to students in all parts of the state.
- NCVPS addressed a pressing need in North Carolina by launching an English I course specifically designed for English Learners built with WIDA and Sheltered Instruction Observation Protocol (SIOP) supports. The course includes enhanced instruction to help English Learners with vocabulary and language development and includes a live class feature to help students build verbal communication skills with their instructor and peers. After a successful pilot semester, the course launched statewide in Fall 2016 and includes students identified as English Learners as well as traditional students. English II, with English Learner supports, launched statewide in January 2017.

- The Montana Digital Academy (MTDA) redeveloped their credit recovery program for the 2015–16 SY with a focus on creating a personalized learning path for students based on content mastery. All courses embed an advanced notification system that fosters communication between the MTDA teacher, local school support and administrative staff, parents and the student so all stakeholders are informed of the progress or areas of focus needed for each student. Using adaptive release, students are presented with one task to be completed before the next task appears in their learning path. This redesign has resulted in enhanced communication to all stakeholders and a clear pathway to meaningful recovery of credit for students.

State virtual schools fill other value-added roles in their states. They build and maintain expertise in online learning within a state that becomes an asset to policymakers, state agencies, districts and other stakeholders. They may help reduce costs by providing online services, such as statewide online and professional development to replace inefficient face-to-face meetings and reduce travel expenses.

Two state virtual schools—New Hampshire’s Virtual Learning Academy Charter School and Florida Virtual School—enroll full-time online students, grant diplomas, and perform the other duties similar to traditional schools.

**Blended learning services.** Providing the services needed for districts to implement blended learning approaches is one of the fastest growing components of state virtual schools. State virtual schools are supporting schools by offering access to online courses, learning management system (LMS) access, professional development for blended learning instruction, technology support and even planning and consulting services. Approaches vary by state virtual school and range from a district blended learning consortium and to real time two-way video instruction. Some examples include:

- The Alabama Connecting Classrooms, Educators, and Students Statewide (ACCESS) Franchise Model is an agreement between the school districts and the Alabama State Department of Education to use select ACCESS online courses in a hosted LMS at no cost. Support includes access to teacher professional development and LMS training, a distance learning specialist, help desk support and two campus visits during the first year for consultation and recommendations.
- Georgia Virtual Schools (GaVS) makes more than 100 courses available to the public as open educational resources (OER). Districts can access these courses, plus assessments, at no cost. The public OER courses are available without assessments.
- The Michigan Virtual School’s MyBlend program offers districts a combination of blended learning services; hosted online courses, teacher training for blended learning instruction, and coaching and consulting for administrators on the implementation of blended learning.
- Virtual Arkansas makes a limited number of its online courses available for schools to use in the classroom in a hosted LMS at no cost. It also has a six-person “Team Digital” field staff that consults with districts to plan and implement blended learning. Team Digital members also conduct much of the face-to-face teacher training and other campus functions for Virtual Arkansas.



## IDAHO DIGITAL LEARNING'S Blended Learning Consortium

In 2009, Idaho Digital Learning (IDL) launched a statewide blended learning consortium to offer online courses and content, training, planning services, and technology to support Idaho school districts interested in implementing a blended learning approach in their classrooms. IDL now provides consortium members access to 27 complete online courses, more than 60 “content only” courses, and over 25 courses developed and shared among consortium members. Members are also able to access IDL’s digital content repository of learning objects, and have access to IDL content development specialists to support the creation of original multimedia interactive learning objects. Consortium members receive nine hours of onsite professional development, online training, learning management system access, and tech support. IDL has three Blended Specialists that travel across Idaho to provide onsite teacher training and consulting services to help districts develop plans to support blended learning.

Technology support is an important aspect of the services consortium members receive. IDL provides an LMS for course and student management, progress reporting, assessments and proactive performance data analysis and management. Members are also able to have a school portal, developed by IDL, that provides schools with an easy way to access courses from both IDL and vendors, and integrate IDL online courses with district programs. Districts retain control over courses and programs accessed through the portal.

There are now 25 districts in the blended learning consortium, including 30 high schools, eight middle and four elementary schools. Annual member fees are determined by the number of students and the number of teachers accessing online courses through the LMS. IDL has established several indicators of success; the number of courses developed, number of teachers trained and using the IDL courses in the classroom, consortium member and enrollment growth. The consortium is working toward gathering data pertaining to student growth and motivation. ■

**College and career readiness** has a renewed focus in many states. College and career readiness programs have been in place in traditional schools for many years, but now state virtual schools are taking a role in providing online courses for college-bound students and those interested in Career and Technical Education (CTE). Online college readiness tools include math remediation, ACT test preparation and college planning tools that better prepare college bound students.

- Virtual Arkansas offers a significant number of online Career Technical Education (CTE) courses, which make up about 4% of course enrollment in state virtual schools. CTE requires a campus-based lab with a mentor/facilitator for these classes because of the hands-on requirements, and all courses must be approved by the state Department of Workforce Development. The program offers dual or concurrent enrollment in partnership with two Arkansas state universities with about 2,372 course enrollments in FY 2015–16.

- Idaho Digital Learning's iPATH (Individualized Professional Advancement Through High School) is a statewide early college high school program that provides the coursework required to earn college credit, industry certification or an associate's degree while still enrolled in high school. In combination with partner institutions and organizations, students can graduate with a high school diploma and a certification or associates degree.
- The Virtual Learning Academy Charter School in New Hampshire has a college and career readiness focus that includes annual assessment of college readiness skills. Its Learning Through College program gives students the option of completing one or more college courses, completing the first year of an associate's degree program, or completing an entire associate's degree program while in high school.

**Supporting state online learning goals** has long been a role played by state virtual schools. State-directed program development has established state virtual schools as a resource for state agencies and legislatures, as well as schools and districts. For example, as part of a statewide initiative to make computer science available in every high school, the Arkansas Governor requested that Virtual Arkansas make online Computer Science available for free to all schools in the state. The Idaho Technology Council awarded Idaho Digital Learning the role to develop Code.org computer coding courses for the state. Statewide online Professional Development (PD) for all teachers and administrative staff is another area where state virtual schools have been asked to create and/or manage online services that reach beyond their traditional role. Michigan Virtual University has operated the LearnPort online professional development portal since 2003. Between September 2015 and August 2016, MVU provided 97,620 hours of professional learning online as well as an additional 14,496 hours of face-to-face or blended professional learning. Illinois Virtual School (IVS) manages the online delivery of statewide professional development as part of its contract with the Illinois State Board of Education. IVS has hosted professional development opportunities for all educators statewide since January 2011. Georgia Virtual School was designated by the Georgia Department of Education (GaDOE) as its leading partner in implementing the Georgia Credit Recovery program that had over 30,000 enrollments during the 2015–16 FY. GAVS supplies an online, self-paced, teacher-less course specifically designed for credit recovery. However, schools must provide a credit recovery monitor for these courses. The program is administered by participating school districts, is legislatively funded, and free to students. Over 90% of students completing the credit recovery courses receive credit for the course.



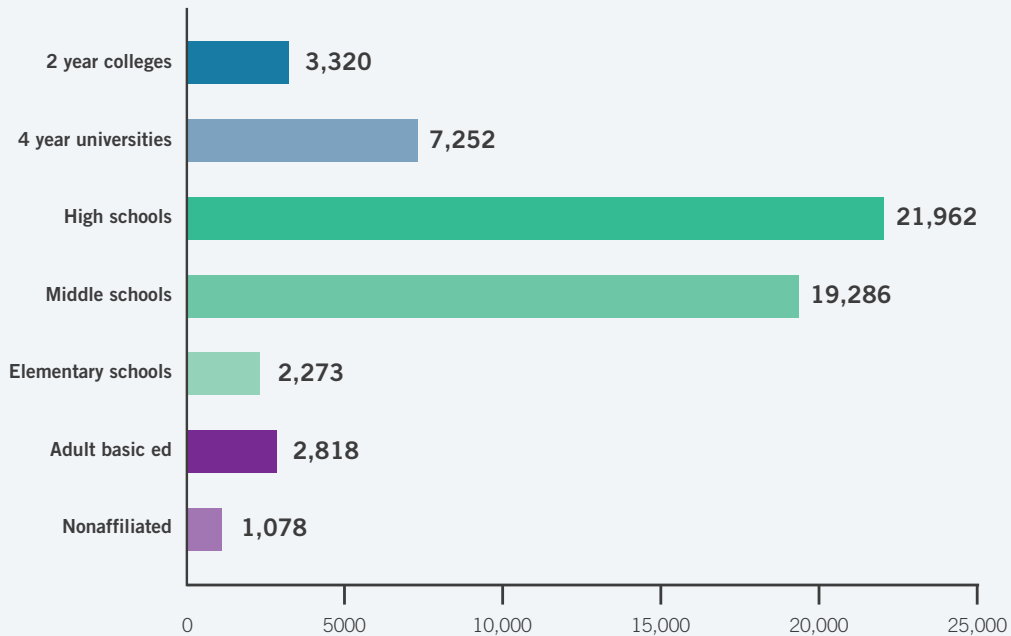
**MONTANA DIGITAL ACADEMY**

**Leading the Way to Better Math Skills**

In 2014 Montana Digital Academy launched EdReady Montana, an online college and career readiness program that assesses student skills in mathematics and provides a mastery-based personalized learning path for students. EdReady Montana was initially used by incoming college freshmen to help them prepare for the math portion of commonly used placement exams such as AccuPlacer, Compass, SAT, and ACT. Since its launch, MTDA has made the EdReady online program available for use, at no charge, by any learner in Montana - students and adults. This allows middle, high school and higher education students the opportunity to hone the critical math skills they need to master in preparation for their desired educational and career goals, from algebra to pre-calculus to the HiSet high school equivalency exam.

Under the management of the MTDA, with financial support from the Dennis and Phyllis Washington Foundation, EdReady Montana has served nearly 58,000 student accounts as of December 2016. While the initial pilot and introduction were in higher education, the program has grown well beyond the intent of the initial design. Usage data shows the most significant increases in Montana middle and high school enrollments as well as the adult basic learning centers throughout the state. ■

**EdReady MT enrollments by organization type**





## MICHIGAN VIRTUAL UNIVERSITY

# Building Expertise to Support a State’s Online Learning Goals



Michigan Virtual University is fairly unique in that it was strategically incorporated as a 501(c)(3) non-profit corporation rather than as a Michigan school or as part of a state education agency. From its inception, its mission to change K–12 education through digital learning was viewed as most likely to be achieved by positioning it outside of the traditional system and its bureaucracies. Through MVU’s Michigan Virtual School (MVS), online professional development for K–12 educators, staff, and administrators throughout the state, its professional learning portal LearnPort, and its digital learning research unit Michigan Virtual Learning Research Institute, MVU/MVS has become a state-recognized expert in the K–12 online learning environment.

MVU has become a highly valued provider of services and counsel to Michigan’s educational community. For example, MVU provides supplemental online courses for K–12 students, but also provides professional development to school staff on how to provide on-site support to online students. It also provides training to expand schools’ capacity to create their own online learning courses as well as how to move toward increased levels of blended learning in the classroom. In higher education, MVU works with Michigan teacher preparation programs to shape pre-service teacher coursework and field experiences so that newly-minted teachers have the skills, attitudes, and dispositions to serve within this growing field. MVU also offers continual support to the Michigan Legislature, Governor’s office and the Michigan Department of Education. These bodies call upon MVU to provide input on online learning policies as well as to provide annual updates as to the state of K–12 online learning in Michigan. ■

## Regional Service Agencies

Regional service agencies play an intermediate supplier role in many states. Forty-five states have some level of education agency between the district and state level. Regional service agencies go by many names; intermediate school districts, Boards of Cooperative Educational Services (BOCES), intermediate units, educational service centers, Cooperative Education Service Agencies (CESA), county offices and others. Many offer online learning services ranging from online courses and professional development to technology tools and course development.

Regional service agencies (RSA) are particularly active in online learning in states that do not have state virtual schools, and where local control dominates. In New York state, for example, BOCES work closely with school districts to help deliver online courses and services. The Wayne Finger Lakes BOCES’ AccelerateU provides online courses for New York students, as well as professional development for online teachers. AccelerateU employs its own part-time online teachers, uses its own LMS, and uses content from several vendors.



## Indiana Online Academy

Indiana has several tuition and fee-based programs that offer supplemental online courses to students statewide. The Indiana Online Academy (IOA), a program of the Central Indiana Educational Service Center, is the largest online supplier in the state, and delivered 20,353 course enrollments to students in 162 public, private and charter schools across Indiana during the 2015–16 FY. Indiana has no state virtual school.

IOA is self-funded and receives no legislative financial support. However, Indiana public schools receive reimbursement from the state for summer school courses. Courses cost \$275 for public school students and \$295 for private and homeschooled students. IOA contracts with 42 teachers who facilitate courses throughout the school year and 231 teachers who facilitate summer school courses.

Indiana Online Academy develops its own courses using subject matter experts and its technology staff. They have designed a three-phase course development process based on the eight standards of the Quality Matters Rubric. Once developed the courses are evaluated by area content teachers using the rubric as a guide. One of their main priorities has been to address Section 508 accessibility standards for all students. Using tools provided by its LMS supplier and other software products, they are working toward ensuring accessibility for all students.

IOA and the Indiana Department of Education Office of eLearning formed a strategic partnership in April 2016 to launch several initiatives. This partnership is part of the Office of eLearning strategy for building innovation capacity through educational technology. The three joint initiatives are the eLearning Leadership Cadre (eLLC), Administrator's Focus Forum, and the LEAD IN Cohort. The Focus Forum and LEAD IN workshops are offered statewide at no cost and focus on current digital innovations to prepare educational leaders for today's learners.

The Capitol Region Education Council (CREC) is one of the largest of six regional service agencies in Connecticut, and provides online courses to students statewide. The online program operates solely on revenue from course fees and receives no state funding. CREC has partnered with GenNET, a consortium of districts in Michigan managed by the Genesee Intermediate School District, to provide online courses, provider vetting and student enrollment functions. The CREC also has a partnership with the Virtual High School (VHS) as the sole distributor of VHS courses in the state. There is minimal supplemental online course activity in Connecticut outside of the CREC, with most school and district activity focused on credit recovery programs. ■

The Wayne Finger Lakes BOCES' is one of 29 BOCES that make up the New York Distance Learning Consortium (NYDLC). The Cattaraugus Allegany BOCES is another NYDLC member that provides online courses to districts within the regional service agency, including dual enrollment and AP. Districts and schools can choose to use their own online teachers of record or can purchase instruction from the GST BOCES or vendor teachers.

TABLE 4

### Regional service agency program example

| Regional service agency programs         | State        | Year online started | No. of districts | Course enrollments | Notes  |
|--|--------------|---------------------|------------------|--------------------|--|
| Indiana Online Academy                   | Indiana      | 2005                | 126              | 25,000             | Statewide program with large summer school enrollments.            |
| MySchool@Kent                            | Michigan     | 2012                | 20               | 3,000+             | More than 750 grade 9–12 students, some full-time.                 |
| Capitol Region Education Council         | Connecticut  | 1966                | 78               | 1,318              | Serves students statewide through strategic supplier partnerships. |
| Capital Area Online Learning Association | Pennsylvania | 2009                | 97               | 18,713             | Districts can customize courses and have flexible teacher options. |
| Northern Star Online                     | Minnesota    | 2003                | 94*              | 4,466*             | Fifteen member districts and 94 districts served statewide.        |
| Cattaraugus Allegany BO-CES              | New York     | 1995                | 23               | 714                | Supports blended learning for teachers in the classroom.           |
| Wayne Finger Lake BOCES                  | New York     | 2003                | 49               | 484                | Accelerate U. is a statewide program.                              |

\* 2014–15 SY data

The Capital Area Online Learning Association (CAOLA) not only works with many districts in Pennsylvania, the RSA also works with detention centers, day treatment facilities and alternative and special education programs to help students who are struggling continue their education. Each district has the opportunity to create and/or customize their own courses using CAOLA vendor content. Member districts also have the choice to use their own teachers for the online courses or vendor teachers, and some use a combination of both.

Instead of directly providing online learning services, some regional service agencies provide coordination and administrative services for schools and districts, assisting in online program planning and advising, contacting and vetting providers, and negotiating agreements for online courses, services and technology.



## KENT INTERMEDIATE SCHOOL DISTRICT

### MySchool@Kent

MySchool@Kent is part of the Kent Intermediate School District (ISD) in the Grand Rapids area of Michigan that supports about 55,000 secondary students in 20 school districts.

MySchool@Kent is a hybrid online model that serves both original credit and credit recovery students supported by both a highly-qualified instructor in online and a face-to-face settings. Students meet with onsite teachers at least twice a week. Original credit students are largely served at the campus of the county regional service agency where students have access to a variety of other career opportunities including diverse programs such as robotics, diesel mechanics and culinary arts. Most credit recovery students are served at four satellite sites that are closer to their neighborhoods and provide a different look and feel than traditional high schools. Partnerships with the local county library system, a new YMCA, a local university and local community service agencies provide the distributed locations for students and teachers to meet.

Students can enroll in an online course to supplement a campus schedule, or take all of their courses online. Full-time students remain enrolled in and receive a diploma from the resident school district. This allows students to participate in all local co-curricular and extra curricular programs in their district, and to receive support not available from the MySchool program.

Two national consulting firms helped design the MySchool program that is now staffed by a principal, four counselors, two interventionists, a teacher consultant and a social worker to support students with an active IEP. Funding for the program comes from the local districts in Kent County. Schools pay course fees on a course and day basis to ensure they are only paying for services used by each online student. Summer school operates on a similar model, but charges parents a \$120 fee per course. A scholarship fund is in place to serve as many as 20% of the summer school students. Students are free to enroll in MySchool at any time of year.

Each student is provided a laptop and a WiFi access card while enrolled in MySchool. Curriculum consists of a combination of vendor-provided core and elective courses, supplemented by locally developed content housed on a proprietary LMS created by the Kent ISD. ■

## Online Learning Consortia

An online learning consortium is an association of two or more schools, districts, or even regional service agencies pooling resources to expand or improve delivery of online learning options for students. It is a concept that is seeing rapid adoption across the country as districts band together to create cooperative online and digital learning programs to gain economies of scale and talent, in hopes of providing a superior program to member schools that they could accomplish individually.

They come in all shapes and sizes, with differing program models, but they share the common characteristic of delivering some combination of online courses, instruction, technology tools and/or other services for the benefit of their members.

Consortia operate statewide and regionally—some even nationally. The Virtual High School (VHS), one of the largest consortia, includes members in many states and foreign countries. SUPERNet, a consortium of 17 largely rural school districts in East Texas, has a regional focus. Other consortia have members statewide and some consist strictly of neighboring districts. eLo (Expanding Learning Opportunities) is a partnership among three suburban Chicago school districts, just entering its third full year of operation. Consortia can be large, with annual course enrollments over 20,000, or as small as several hundred course enrollments, and vary in terms of the scope of what they supply their members.

TABLE 5

### Online and digital learning consortia examples

| Consortia   | State         | Year formed | Reach     | No. of members | Course enrollments | Notes  |
|---|---------------|-------------|-----------|----------------|--------------------|--|
| The Virtual High School                                   | Massachusetts | 1996        | National  | 639            | 18,455             | Students from non-member schools can also enroll in VHS supplemental courses.                              |
| GenNET  | Michigan      | 1995        | Statewide | 400+*          | 18,000*            | GenNET extends the Michigan Department of Education seat-time waiver to partner districts across Michigan. |
| SUPERNet  | Texas         | 1996        | Statewide | 16             | 6,824              | SUPERNet serves member districts, but enrolls students statewide through the Texas Virtual School Network. |
| Wisconsin eSchool Network                                 | Wisconsin     | 2002        | Members   | 25             | 27,341             | Course enrollments include the eSchool's partnership with Wisconsin Virtual School.                        |
| Hampton Roads Educational Communications (WHRO Education) | Virginia      | 1984        | Members   | 19             | NA                 | Focuses on course development for members; licenses courses to other VA districts.                         |
| Indiana Virtual Academy                                   | Indiana       | 2002        | Statewide | 5              | 3,223              | Five partnership schools enroll students statewide from 75 schools.  |

\* 2013–14 SY data



## THE VIRTUAL HIGH SCHOOL

### A Global Consortium

The Virtual High School's (VHS) unique structure and approach to working with member schools is often referred to as a collaborative. For the purposes of Keeping Pace, this nonprofit organization is most like a consortium supplier, where members share online instruction and content. In addition, members benefit from online course development, technology, teacher professional development and other online learning services provided by VHS. Although particularly strong in the Northeast (VHS partners with nearly 200 middle and high schools in Massachusetts with over 6,800 enrollments in the state), the Virtual High School is national in scope with members in 40 states and territories and an international presence with students in 33 countries. VHS had 18,455 course enrollments and about 12,000 students in FY 2015–16.

VHS has multiple options for school partnerships. Schools with Teaching Memberships designate teacher to teach a VHS course and in return the school saves on membership fees. Student Only Membership schools may participate in VHS in a student “seat” model, with as few as two seats and schools enjoy discounts based on the size of their membership. Consortium Memberships share seats and take advantage of a volume discount option for educational service agencies, state or district programs. Students may enroll directly with VHS at a cost of \$450 per semester course. The VHS also offers a full-time program in which students may take their entire high school curriculum online through VHS, while still remaining students within their local school district.

VHS has developed over 200 original online courses, including an innovative science course, Space Station Academy, that offers students a virtual trip to the International Space Station. Students work on real-world experiments with astronauts and receive feedback and facilitation from former space explorers. Space Station Academy combines STEM disciplines to create an engaging and interactive learning experience for middle and high school students. ■

Membership models and governance vary as widely as size and geographic reach. Some consortia limit their offerings to their members, but others extend their services to schools and districts outside the consortium. The Indiana Virtual Academy (IVA) is a consortium that was formed to provide online learning for students in the school districts in Ripley County. It discounts services for partner schools and residents of Ripley County (\$190 per course), but enrolls students across the state at a cost of \$295 per course, with around 3,200 total course enrollments in FY 2015–16. The consortium is governed by a Board of Directors that consists of a regional career center, the director of a local community foundation, and the superintendents of the four school corporations in Ripley County. SUPERNet in Texas reaches beyond its regional membership to include some of its courses in the Texas Virtual School Network catalog that allow students from across the state to enroll in SUPERNet courses. SUPERNet develops all of its course content in-house using member district teachers. Members pay an annual fee to have access to all course offerings.



Other examples of consortia membership models and services include some of the following:

- GenNET Online Learning is a consortium developed by the Genesee Intermediate School District in Michigan that offers districts access to online courses through its Online Learning Portal of courses from approved online course providers. GenNET is authorized by the Michigan Department of Education to extend its seat-time waiver to partner districts across the state. The seat-time waiver allows a district to have the state's pupil accounting rules waived to allow eligible students to take coursework online. Any member district can enroll students in grades 6–12 in up to two courses via GenNET without a seat-time waiver. Students in grades K–5 enrolled in a Genesee County school or any contiguous county can enroll in GenNET courses as well.
- Hampton Roads Educational Telecommunications Association (Virginia) is a unique district membership and online course model that began as a partnership between the Norfolk and Hampton Public Schools and WHRO public television. Over the past decade, it has evolved into WHRO Education that provides 23 online courses correlated to Virginia's standards 19 member districts. The courses can be licensed by Virginia schools outside the consortium membership and imported into several different learning management systems. Once licensed, schools are free to modify the content as necessary.
- There are several active online and blended learning consortia in Ohio. Learn 21 is a consortium of 18 school districts that work together to review online learning supplier products and broker licenses for the members of the organization. Learn 21 offers professional development, digital course design, data integration, and other online learning services to members. The Stark-Portage Area Computer Consortium (SPARCC) serves school districts in Stark, Portage and Carroll counties, and is one of 22 Information Technology Centers (ITC) located throughout Ohio. SPARCC led in the creation of a cooperative of districts that pooled resources for a group purchase of online courses from Florida Virtual School, resulting in an estimated \$500,000 in savings for participants. The independent Ohio Blended Learning Network (OBLN), led by Mentor Public Schools District and facilitated by the nonprofit organization SmarterSchools, has 60 members statewide, ranging from small charter schools to large public school districts.

Private schools interest in online supplemental courses has driven the formation and growth of several consortia including the Hybrid Learning Consortium, the Malone Schools Online Network, the Global Online Academy, and the Online School for Girls. In addition to these consortia, which operate nationwide or across large geographic areas, several regional consortia function as well. These include the Bay Area BlendEd Consortium in the San Francisco Bay Area, the Eight Schools Association in New England, VizNet in the southeastern U.S., and MSASnet in the mid-South.



## WISCONSIN ESCHOOL NETWORK'S

# Unique Consortium Structure and Services

The Wisconsin eSchool Network (WEN) is one of the largest online learning consortia, consisting of 25 partner school districts, eight of which are among the 11 largest districts in the state. WEN had 27,341 course enrollments in FY 2015–16, including over 5,000 supporting its partnership with the Wisconsin Virtual School. It had over 1,350 enrollments in Advanced Placement courses. WEN was formally established as a 501(c)(3) nonprofit organization in 2012 after years as an informal consortium of districts.

WEN has a two-tier member structure. **Invested Partner membership** is designed for members with a comprehensive plan for online and blended learning that includes an emphasis on local autonomy and use of local teachers and staff. Invested Partners make a significant one-time investment that provides the lowest operating expenses of any pathway and a voting seat on the WEN board of directors. Invested Partners are building scalable digital learning programs to support growing online enrollments, increased use of student devices on campus and greater integration of digital content and instruction in the classroom. One of the most powerful benefits WEN affords Invested Partners is the opportunity for teachers and staff to collaborate with peers facing the same challenges and implementation issues. Invested Partners also contribute to the direction of online learning practice and policy at the state and local level.

**Affiliate Partner membership** is appropriate for districts ready to take on more control and ownership of their program as they become members in the WEN consortium. Affiliate Partner districts have access to WEN's online course catalog, licensed teachers, technology tools, student orientation courses and professional learning while benefitting from lower cost, scalable enrollment fees. The Affiliate membership allows districts to retain a high degree of local control, using a combination of local instructors with online teachers from Network partners as needed.

WEN provides cloud-based infrastructure for all members, including a course registration and management portal, learning management system, online content owned by WEN, licensed content from multiple vendors, infrastructure that allows partners to build local digital content, and professional learning curricula. WEN employs four full-time and six part-time staff that work with a board comprised of Invested Partners and other educators. WEN is a partner in the Wisconsin Digital Learning Collaborative, a collaboration with Wisconsin Virtual School and the Wisconsin Department of Public Instruction to provide a single point of access to online courses, digital learning solutions, and resources for students statewide. Additional details about the WEN structure and district partners are available in the 2016 report, Wisconsin Digital Learning Collaborative: A Review of Programs and Partners. ■

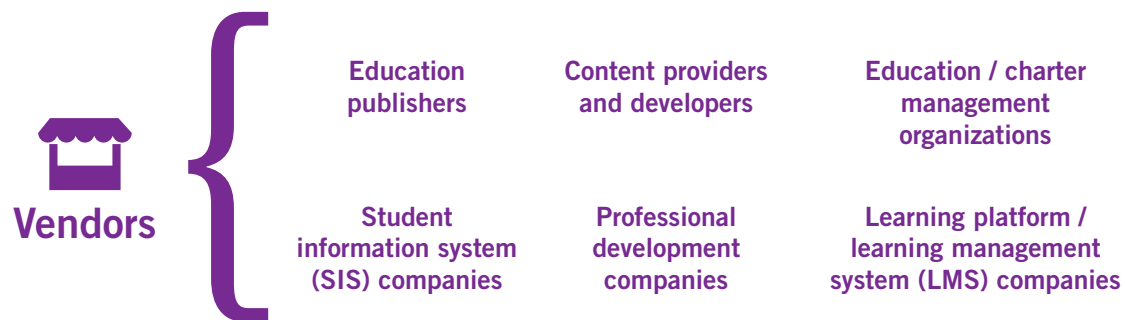
# Online learning vendors

Somewhere along the line, somebody wrote the first textbook here in America. Perhaps it was the “*The New England Primer*,” written in 1690, required reading by all schools in America. At some point, this or some other textbook had to be printed in volume, and sold and distributed to schools. The education vendor was born.

We use the term vendor in *Keeping Pace* as an umbrella term to refer to a fairly wide variety and complex fabric of companies and organizations that serve the K–12 education industry, particularly as it applies to digital learning. We think of a company as a vendor if it’s *primary* business function is the creation and distribution of original products and services for the education industry.

FIGURE 6

## Major education company types



The large majority of education companies in the digital learning arena are typically identified as one of the company categories in figure 7. Companies do not always identify themselves as a “content provider,” for example, but more often might say they are a provider of innovative online and blended learning solutions. Other than education materials, digital content, and other instructional items that are created within schools, by their own teachers and staffs, virtually all other education technology and related content and tools come from this large cadre of companies—mostly for-profit companies, but some are nonprofit.

**Education Publishers.** Most of these companies were long time traditional textbook and education materials publishers that have moved into offering a wide variety of digital content, tools and related products and services. A primary motivation for these publishers to enter into the digital learning products and services arena has been to sustain and expand their companies, as the demand for print instructional materials declines and the demand for digital content and tools increases—the “shift to digital” movement. The largest of these publishers have products and services in virtually every category, including in a few cases owning their own schools. Many of the notable publishers are well over 100 years old—Pearson was founded in 1844.

**Content Providers.** Content providers, also referred to as content developers, are in the business of creating and delivering original instructional content, like a publisher. But most companies referred to as content providers—rather than publishers—started their company from the outset to create and deliver digital content. As such most of these companies have started within the last 20 years, with a handful (e.g. PLATO/Edmentum) that are 50 years old. Some focus only on content, but many surround digital content with other products and services. Often, for example, a content provider will develop its own learning platform or adaptive learning software, in which it embeds content.

**Learning Platform and LMS Companies.** In the early years of online learning, the systems used were usually called course management systems. This was for good reason, because their purpose was to manage course syllabi so students could launch courses and communicate with their teachers. Not to diminish these early systems, online learning could not have flourished as it did without these early pioneers. Over time, however, most of these have evolved into learning platforms that provide a wide range of features to enhance the learning experience, and hence have become known as learning management system—and learning platforms. A divergence in product philosophy by various vendors has taken many of these products in different directions, such as adaptive learning, data analytics, social collaboration, and still others focused on parent and mentor communication.

**Student Information Systems (SIS).** Student information systems companies have been the backbone of the education software industry since there were computers and software. In the early days—meaning the mid-1960s—computer and software companies created a robust business across America developing custom student information and administrative software systems for schools and universities. There were no off-the-shelf applications then—for any applications. But these early systems evolved into standard products that today are applications integrating all aspects of a school's or district's information systems environment.

**Professional Development companies.** The professional development (PD) industry was estimated at an annual spend rate in 2015 of around \$3.9 billion in the United States. The overwhelmingly large percentage of this number is made up of internal school, district and state agency expense in developing and/or delivering its own PD, mostly labor expense. A lesser, but significant, portion of PD is provided by a wide range of companies and organizations that offer PD products and training services to schools and districts. A fair amount of professional development associated with the online and digital learning products is provided directly by the companies who make digital learning products, but a growing number of focused PD companies are filling a need gap in digital learning, particularly in the areas of new school teaching and learning models, such as blended learning and competency-based learning.

**Education Management Organization and Charter Management Organization.** Education management organizations (EMOs), and charter management organizations (CMOs) are companies and organizations that provide “whole-school operation” services to public school agencies. There are a large number of companies and organizations in this business. Some CMOs/EMOs are divisions within larger, multi-divisional companies. They manage traditional K–12 public schools on behalf of a school district (“contract schools”) or manage charter schools as the charter holder (“charter schools”) or under contract with the charter holder (“contract charters”). We include them in this group of organizations, because a very significant portion of the full-time online learning activity is in charter schools, particularly those managed by CMOs. Many notable EMOs and CMOs are for-profit companies; most, however, are nonprofits. In an effort to keep state and local control, nonprofit CMOs are increasingly being created at the local level.



## Arizona Virtual Academy

Arizona Virtual Academy (AZVA) is one of the oldest online charter schools in the country and is the largest of five virtual charter schools in Arizona. AZVA served about 4,000 students in grades K–12 from across the state; approximately 41% are elementary grades, 36% middle school and 23% are high schools students. Student eligibility for free and reduced-price lunch closely mirrors the state average of 58%. AZVA is managed by K12 Inc., which also manages Insight Academy of Arizona. Insight Academy was launched in 2012 as an alternative school, serving at-risk students in grades 7–12, including those with significant credit deficiencies, drop outs returning to school and teen parents. Insight Academy enrolled about 1,000 students in Fall 2016. Both schools follow the same reporting requirements and mandates as all other public schools in the state.

AZVA is a fully online study program in which learning takes place at home, on the road, or wherever an Internet connection can be found. While attendance, teacher interaction, and daily lessons are conducted online, AZVA's lessons also include physical materials and offline tools when appropriate.

Expectations for parental involvement vary based on the age and grade level of the student. For elementary age students, AZVA sets the expectation that a learning coach (parent of other adult) will work with the student throughout the day in coordination with the AZVA online teacher. The learning coach keeps the child on task, answers questions, works with online teachers and maintains a high level of hands-on involvement.

AZVA sets the expectation that the learning coach will be integrally involved with middle school students, although there is usually less parental/coach involvement as students get older and have more experience with online learning. By the time students reach middle school, they are typically working with multiple online teachers in multiple subject areas. Online middle school teachers are trained to be aware of the gradual shift away from parental coaching for elementary children and employ different instructional and communication strategies with middle school students. By the time an online student reaches high school, it is assumed that the learning coach has a minimal role in coaching throughout the school day. High school students may have as many as six or seven online teachers in various subject areas, plus an online mentor.

For the past two years, Arizona Virtual Academy High School has ranked as one of the top 50 high schools in the state based on SAT scores in the Phoenix Business Journal's annual rankings of the Top 50 High Schools in Arizona. AZVA High School was ranked 38th in 2016.

AZVA High School achieved higher passing test scores in 9th–11th grade English Language Arts (ELA), in Algebra 1 and Geometry end-of-course exams (EOC), and were within one 1% of the state average in Algebra 2 EOC pass rate.

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### ARIZONA VIRTUAL ACADEMY (CONT.)

|                         | 9th grade ELA* | 10th grade ELA | 11th grade ELA | Algebra 1 EOC** | Geometry EOC | Algebra 2 EOC |
|-------------------------|----------------|----------------|----------------|-----------------|--------------|---------------|
| <b>AZVA</b>             | 40% passing    | 41             | 39             | 37              | 35           | 29            |
| <b>AZ State average</b> | 35% passing    | 30             | 30             | 36              | 34           | 32            |

\* English Language Arts

\*\* End of course exams

Some students and parents prefer an environment in which students learn at a physical location. To meet this demand AZVA began offering students blended learning options in 2010, combining online learning with face-to-face instruction and support at locations across Arizona. Students visit learning centers from approximately 8:30 am to 3:30 pm, followed by optional time to participate in digital clubs and other group activities. Currently about 450 of AZVA's 4,000 students participate in the blended learning program, and there is a waiting list. Fully online students may drop by the learning centers after class time to participate in group activities and digital club activities.

The learning centers have three or four classrooms with a coordinator in each classroom; helping students get started with their work, answering questions, assisting with technology skills and problems, and generally coaching students through the learning process. There is also a full-time teacher on-site, usually a math teacher that floats between the classrooms as needed.

The five active learning centers are located across the state, in both metropolitan areas (Phoenix and Tucson) and rural communities. AZVA has one learning center in northwest AZ with about 130 students, and a new learning center in Queen Creek with about 75 students that opened in January 2017. AZVA entered a partnership with the nonprofit organization, one-n-ten, to provide a blended learning site for LGBTQ youth. Many of these students have left the traditional school because of bullying and other social issues. The one-n-ten school has about 15 students attending on a daily basis and the school will be moving to a larger space in 2017 to accommodate more LGBTQ students.

Group activities at the blended sites range from STEM clubs with an active robotics program, to gardening clubs that include creating indoor tower gardens. The middle school robotics club includes both virtual and blended components, performing admirably in competitions across the state with traditional students. The robotics club is now expanding to AZVA High School. ■



## Ohio Connections Academy

Ohio Connections Academy (OCA) is a fully online, accredited public school where students learn at home through daily lessons conducted over the Internet. It is a personalized approach to online learning supported by highly qualified Ohio certified teachers trained in online instruction. OCA enrolled 3,600 students in Fall 2016; 1,004 in grades K–5, 922 in grades 6–8 and 1,674 high school students.

OCA has provided online options for students since 2004 making it one of the oldest cyber charter schools in Ohio. It is managed by Connections Education, a nationwide provider of virtual education management solutions. Student demographics at OCA are very similar to the state average with approximately 79% white and 21% minorities. Approximately 10% of OCA students are on Individualized Education Programs (IEPs). The percentage of economically disadvantaged students and those with disabilities are slightly lower than the state average.

Ohio Connections Academy has a track record of success that has continued to improve in recent years. During the 2015–16 SY, the school received an “A” grade on its state report card in all value-added categories. As part of teacher evaluation, Ohio applies value-added categories that measure the impact schools and teachers have on students’ academic progress rates from year to year.

The Ohio State Board of Education also awarded OCA a Momentum Award (2016) that recognizes schools for exceeding expectations in student growth for the year. Schools must also earn straight A’s on all value-added measures on the report card. The school or district must have at least two value-added subgroups of students, which includes gifted, lowest 20% in achievement, and/or students with disabilities.

Academic success at OCA does not come without its challenges. Students are usually attracted to virtual education to solve a problem or address a special circumstance—a problem they did not think a traditional brick & mortar school could solve. Students’ families may be highly mobile or come with significant credit deficiencies. A student may have a short- or long-term medical issue, or suffer social-emotional problems or bullying. “For some families, this is the only option that works,” notes Ohio Connections Academy Superintendent Marie Hanna. “I could cite endless anecdotal evidence; the ballet dancer who needed a flexible schedule; the child who was bullied in her resident public school to the point of needing therapy; the student whose medical condition kept him home from school.” Sometimes parents may simply have concerns about the quality of their local public education options.

Student mobility poses one of the biggest challenges facing OCA regarding student performance. Almost three-fourths of OCA students have been enrolled fewer than three years, and mobility by this measure is higher than over 90% of schools in Ohio. Virtual schools, in general, have a significantly higher rate of student mobility than traditional brick and mortar public schools. On average, in a virtual school, roughly 35% of the students are new to the virtual school, having switched from their previous school for a wide variety of reasons. This is several times the mobility rate of all but the highest-mobility traditional public schools.

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## OHIO CONNECTIONS ACADEMY (CONT.)

Ohio Connections Academy has developed a strong college preparatory program, offering a range of Advanced Placement courses and college credit options. OCA students in grades 7–12 may earn dual credits through Ohio’s new College Credit Plus program that allows students to take courses at a local public college and accrue credits toward an Associates degree before high school graduation. Dual enrollment courses are free, including tuition, books, and other fees.

OCA is focused on improvement plans in critical college and career readiness areas like mathematics. Connections Education has invested heavily in providing curriculum enhancements in mathematics for grades 3–12, winning the 2015 United States Distance Learning Award for *Best Practices in Distance Learning Programming* for its work in math curriculum. Connections has added math discourse and reasoning elements to its math courses, expanded professional learning and added more math intervention to its curriculum; student reflection exercises, portfolio assignments, continuous math assessments with alternative math presentations for remediation, and a new National Honor Society (NHS) Peer Tutoring program for high school math courses.

Connections has developed LiveLesson “classrooms” for teachers to work with students in real-time; as a class, small groups or 1:1. Teachers review data from online course assessments, develop alternate instruction to provide more personalized learning based on performance data, and then use LiveLesson environment to work with students in real time.

OCA employs a K–12 Math Facilitator to support both math students and teachers. The Facilitator sits in on LiveLessons, and may help teachers work with students, make suggestions to teachers for making instructional improvements, analyze and supply teachers with student data. The Facilitator also conducts four middle school math sessions each week where students drop into her LiveLesson classroom for additional help.

OCA recognized the need to enhance the skills of teachers as well as math curriculum, and reemphasized the use of professional learning communities (PLC). PLCs now meet twice a month. Four math PLC teams organized by grade levels address topics ranging from how to better work in LiveLesson and student data analysis, to common grading questions, how to handle interventions, and discussions on supplemental programs for alternative learning options. Elementary math teachers participate in a national professional learning program managed by Connections Education.

Superintendent Hanna attributes much of the growth and academic achievement of OCA students to the strong staff retention record at the school. Ms. Hanna has been with Ohio Connections Academy since 2005, starting her career as an Assistant Principal. “Most of our administrative staff and teachers have been with school for at least five years,” notes Superintendent Hanna. “OCA is also the first Connections Education virtual charter school to have not only one, but two of its graduates return to become online teachers at the school.” ■





## Poudre School District Global Academy

Poudre School District Global Academy (PGA) is one of 59 schools in the Poudre School District in Fort Collins, Colorado. PGA began as a virtual school in 2009 using Fuel Education (FuelEd) instructors teaching online courses for students in grades 6–12. From 2010 through 2013, PGA evolved into a school for any student who needed or wanted a non-traditional educational experience, attracting advanced and accelerated students as well. In 2016, PGA embraced a blended learning model where students in grades K–12 attend on-campus classes two days per week and work online three days per week with their local classroom teachers using both the FuelEd curriculum and courses developed by PGA teachers. The Academy has grown from an enrollment of 22 students and three staff in 2009 to a 30-member staff (18 teachers and 12 administrative staff) serving 194 K–12 students in Fall 2016.

PGA's motto, “global education—local community” also exemplifies the importance of relationships in the school's success. Globally, PGA students connect with students in other schools, other states, and other countries. Close to home, students are regularly actively involved in community projects that enhance their educational experience. Each school year, for example, the PGA Student Council collaborates with PGA students at large to select a student-led community service project, which in the past has included projects such as the Colorado State University Cans Around the Oval, the McBackpack Weekend Meal program, and the United Way Make-A-Difference Week.

Cheryl Fenlason, PGA's principal, points to three keys to growth in student achievement: 1) comprehensive and well-designed student performance reports from FuelEd, 2) one-to-one mentoring that teachers provide each student, and 3) the parental or guardian role as learning coaches.

Learning occurs both at home and in the school building, i.e., on campus. Students are on campus two days per week and studying online from home the other three days. On-campus schedules vary by grade level. Approximately 60% of all instruction for K–8 students is online and 80% is online for 9th–12th grade students. FuelEd and its content partner K12 Inc. provide most of the online courses and related content, which students access both on and off campus, providing continuity across the entire learning life cycle.

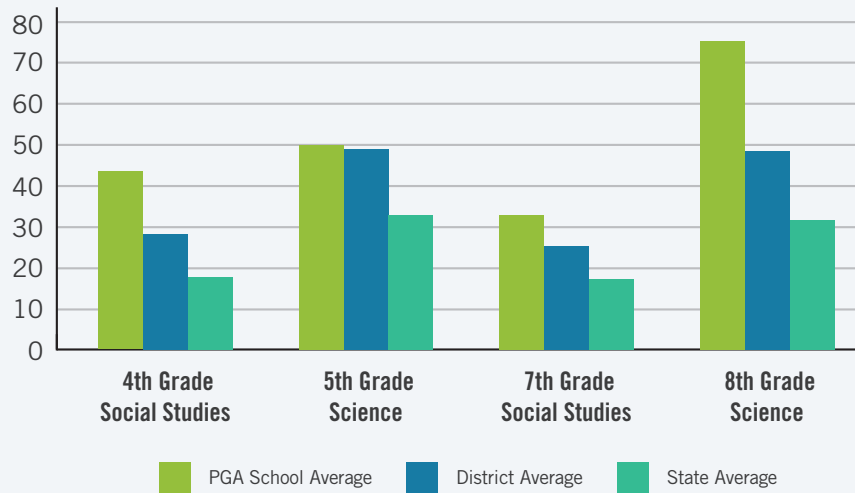
Each of the past seven school years (through SY 2016–2017) has seen student assessments improve, going from “no official data due to too few students” to academic growth rates in reading and math that surpass both their Colorado peers and their peers across the United States. PGA received two prestigious awards based on the 2015–16 SY student performance; the Colorado Department of Education's John Irwin Schools of Excellence in Education Award for exceeding expectations in student achievement and the [Colorado] Governor's Distinguished Improvement Award for exceeding expectations in academic growth.

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POUDRE SCHOOL DISTRICT GLOBAL ACADEMY (CONT.)

PGA Math and Reading Yearly Percentile Gains



*Note: Students are assigned a percentile ranking based on national norms for age. If a student has the same percentile rank at the beginning and end of the year, that student has essentially achieved one year's growth. Students who see an increase in their percentile ranking have achieved more than a year's academic growth.*

While much has changed from 2009 to 2016, the one constant is the importance PGA places on relationships between and among teachers, students, parents, and staff.

**PGA's teachers**, staff and learning coaches collaborate to teach and mentor students throughout the week. Teachers teach blended learning classes on campus on a prescribed schedule, and they also facilitate and mentor students within their FuelEd online courses on a more flexible schedule. Learning coaches mentor and work with students to augment and support teachers. The fabric of the learning experience is strong because of its diversity, comprehensiveness, and focus on individual student success.

PGA teachers are responsible for on-campus instruction, as well as facilitating students' online courses. They monitor the online work of individual students and provide suggestions, encouragement, and learning strategies. On campus, teachers work with small groups of students, or with individual students, to ensure each student is successful and meeting his or her growth goals. PGA teachers collaborate to customize online and classroom instruction. They can customize the online content, or they can develop original online content.

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## POUDRE SCHOOL DISTRICT GLOBAL ACADEMY (CONT.)



**FuelEd teachers** are part of the teaching team. Not only do they provide the online courses, they also provide certified teachers for electives such as world language and Advanced Placement courses. While PGA teachers are responsible for teaching all core courses, both online and on campus, FuelEd online teachers fill in where PGA needs teachers for electives.

Learning coaches are an integral part of the teaching team. Students' parents or other responsible adults are actively involved in mentoring and tutoring at PGA. As students move into higher grades involvement gradually changes and decreases somewhat. For example, learning coaches of K-3 students are delivering instruction, tutoring, and providing feedback, while learning coaches of students in grades 4 and 5 are less involved in delivering instruction but they still are required to review and sign off on student work. By grades 4 and 5, students are learning to become independent learners. In the upper grades, learning coaches monitor learning at home and communicate with teachers as needed.

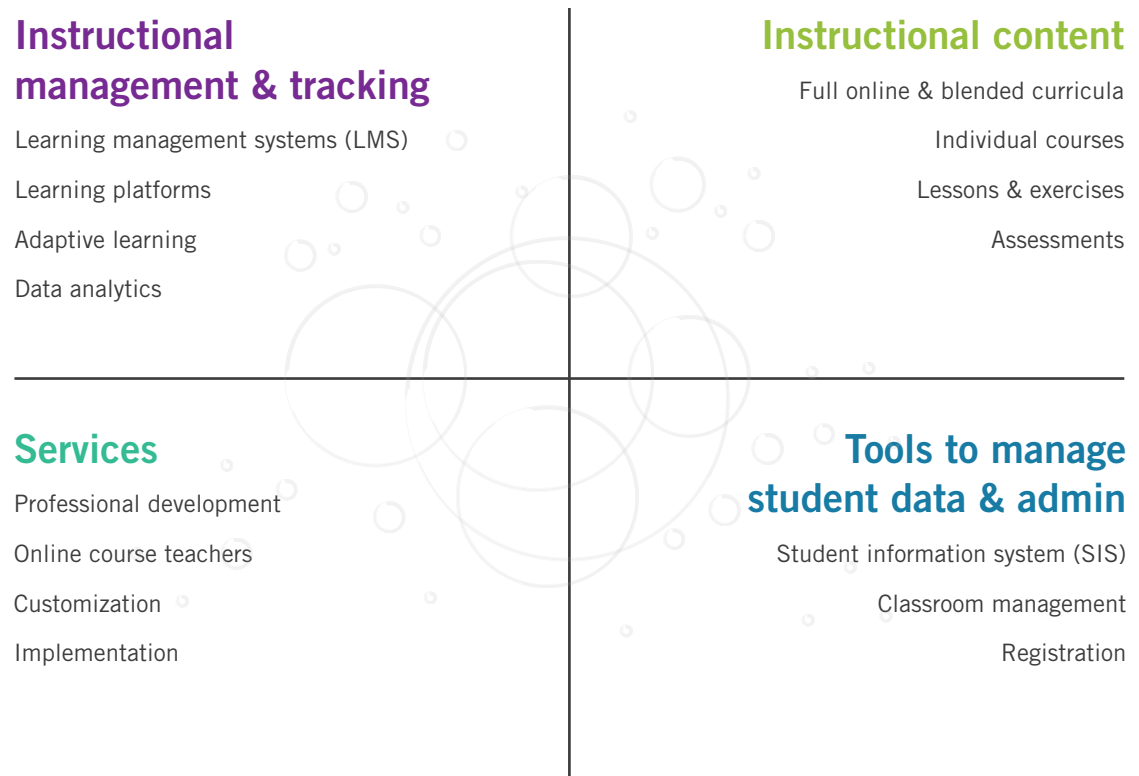
**Parents** or other responsible adults learn to be effective learning coaches by participating in the following training sessions:

- Learning Coach Mentorship Program – Current successful learning coaches mentor new families.
- Jump Start Week – The first week of school all learning coaches practice activities such as scheduling a conference with their child's teacher or emailing their mentor.
- Orientation – A half day on-campus session in which learning coaches discuss PGA policies and expectations, meet with teachers and learn to log into the online system to review student grades and assignments.
- Learning Coach Academy – An optional monthly update session for K-8 learning coaches. ■

# Vendor products and services for online and digital learning

In some cases, the products and services provided by digital learning vendors may be evident based on the name or company type as shown above, but a significant number of these companies provide a much broader range of products and services in order to provide comprehensive solutions to schools. A few of the very largest companies provide almost all of the products and services shown in figure 7, above. It is often true that the more comprehensive a solution is, covering a wide range of products and services, the easier it is for a school or district to implement and successfully operate online and digital learning programs, relieving it from the challenges of working with a larger number of vendors, and having to integrate multiple products into a unified student learning experience.

FIGURE 7  
Types of vendor products and services



## Districts as online learning suppliers

The majority of schools use online courses from suppliers that operate nationally, statewide or through regional consortia. Many also use the online teachers that are an optional service provided by most vendors. However, school districts, particularly larger metropolitan districts, increasingly fill the role of suppliers to schools.

Districts acting as suppliers to schools may have some or all of the following goals for acting as suppliers of online learning.

- Retain a greater degree of local control over online offerings to its students.
- Build online learning expertise among its own teachers, technology and administrative staff.
- Manage costs by buying or licensing online courses and content from other suppliers; vendors, state virtual schools, etc.

Most district programs are focused on in-district students, but in some states districts may act much like state virtual schools, providing courses for students outside the base district. For example, Mesa Distance Learning Program (MDLP) in Arizona is an online program of Mesa Public Schools that served 33 districts with over 20,000 course enrollments across Arizona during the 2015–16 FY. Over the years MDLP has developed its own online content and delivers the courses over its own LMS, allowing MDLP to keep courses fees to districts priced below most other suppliers (\$150 per course enrollment). Although a small district, Grantsburg School District's iForward program is in its ninth year of offering full-time online options for about 550 students in grades 6–12, representing almost every county in Wisconsin.

Some districts have gone so far as establishing an online learning graduation requirement for resident students, regardless of the state position on such requirements.

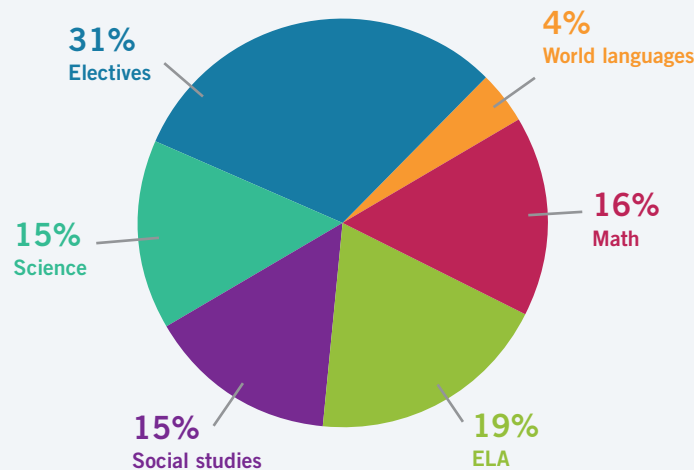


## Gwinnett Online Campus

Gwinnett County Public Schools (GCPS) is a large suburban school district outside of Atlanta, Georgia, with approximately 178,200 students. Gwinnett Online Campus (GOC) is an accredited online school within GCPS that had 5,124 course enrollments during the 2015–16 FY. Gwinnett Online Campus also enrolled over 500 full-time students in grades 4–12 in FY 2015–16, all GCPS resident students.

The instructional program for students in grades 4–9 offers a blended approach to the online experience in which full-time online students can attend Learning Labs on campus two mornings per week or login from home to join the live class sessions. These students meet face-to-face with their online teacher once per week that replaces the online lesson for that day. High school students taking online courses are able to come to campus once per week and meet with the Department Chair or their online teacher to receive additional curricular support. Students enrolled in science courses also attend live science labs every three weeks. About 65% of course enrollments during the 2015–16 FY were in the core subject areas of math, English language arts, science and social studies.

Course enrollments by subject area SY 2014–15



Gwinnett Online Campus students score above the average on District Developed Assessments and State Milestone Exams in the majority of subject areas across grades 4–12. All state assessments and final exams are taken on campus in proctored settings.

In the fall of 2015, Gwinnett Online Campus launched a program targeting dropout students with 18 or more credits. The Graduate Gwinnett Program targets students who have dropped out of their local high school, providing individualized online learning environment with face-to-face support as needed. Students are contacted by GOC staff and invited to join the program. After an orientation to the program, students are enrolled in one online course at a time during a 20-day session. If students do not complete the course in the first 20-day cycle, they continue in the course during the next session. On campus or virtual sessions are provided with teachers. During the first full year of the program 51 students earned their diploma. In the spring of 2017 there were 70 students enrolled in the program. ■



## Clark County School District and the Nevada Learning Academy

Clark County School District (CCSD) is the fifth largest school district in the U.S., and unique in that it serves almost 75% of all Nevada public school students— over 320,000 of them. Nevada Learning Academy at Clark County School District (NVLA) is the primary provider of both supplemental and full-time online learning opportunities for grades 6–12 for the district. Launched in fall 2004 as Clark County Virtual High School, it combined with the Academy of Individualized Studies program, expanded online courses for middle schools in the district and became NVLA. NVLA had 11,439 students take 23,513 online courses in FY 2015–16. In addition to NVLA, CCSD high and middle schools use supplemental online courses supplied by vendors, taught CCSD teachers. The district had 93,240 course enrollments in vendor courses in the 2015–16 FY.

NVLA provides a variety of online options including a middle school hybrid model, where full-time online students come to campus two days a week for teacher led-instruction and project-based learning, and two online programs for high school students that take a competency based approach. NVLA's Credit by Exam gives high school students an opportunity to demonstrate knowledge equivalent to high school course work through an examination. Students may earn credit for a course by passing an examination rather than taking the course. Credit by Exam (CBE) is only available within courses that the student has not previously been issued a progress grade. During the 2015–16 SY students earned 629 credits through NVLA,

The NVLA independent study program offers high school students flexibility within a mastery-based system. Student work through online content, demonstrating competency along the way on lesson quizzes, projects, and other assessments. Weekly attendance is mandatory. Using ten different local school sites across Clark County, including the NVLA campus, students attend sessions for proctored end-of-unit assessments until they complete the course. This allows for a shortened timeframe for course completion, typically 6 to 9 weeks. Students can access their online course when and where they choose, progressing at their own pace, offering flexibility within a structured system. All online classrooms have highly qualified teachers in the subject area monitoring, supporting, and interacting with students through course completion. In addition, students have access to a licensed teacher at their assigned proctored testing site who acts as a guide or coach.

Over the last two years, while expanding the NVLA semester-based online program, Clark County School District has been in the process of creating district-wide online courses for use outside of NVLA. Traditional comprehensive schools can utilize these district-created online courses at their neighborhood schools, using site-based teachers, rather than relying on vendor products. CCSD had 4,414 course enrollments in district developed online courses in FY 2015–16.

During the fall of 2015, CCSD embarked on a district Google Suite for Education deployment. The district operates 356 schools, and began with a limited rollout to 32 schools, adding new schools each week. By mid-December nearly 200 schools were onboard and by the end of the school year 257 schools had enrolled into G Suite for Education. ■

# State Agency Oversight and Support Services for Online Learning

Government agencies in many states, but not all, play an active role in oversight and administration of online learning, including monitoring of the supply of online learning to schools, as well as how online learning is accessed and used by schools. These state agencies often approve online courses and/or suppliers per state regulations, and/or act as a facilitator between schools and suppliers to assist students in finding and enrolling in online courses with suppliers. Many of the states with the most active oversight programs are those without state virtual schools, Florida and Michigan being notable exceptions. This is because the state virtual schools are themselves providing administrative and regulatory leadership in their states.

State agency involvement in online learning varies dramatically, from being actively involved in online learning to state agencies with minimal involvement. Active state agencies perform a range of functions, such as:

- Overseeing the review and approval of supplemental online courses and suppliers of online courses, and full-time online school programs.
- Providing web-based catalogs where students can review and select approved online courses.
- Supporting or operating statewide professional development programs for online learning teachers across the state.
- Oversight of state virtual schools, virtual schools and virtual charter schools.
- Data gathering and reporting for education stakeholders (re. policymakers).

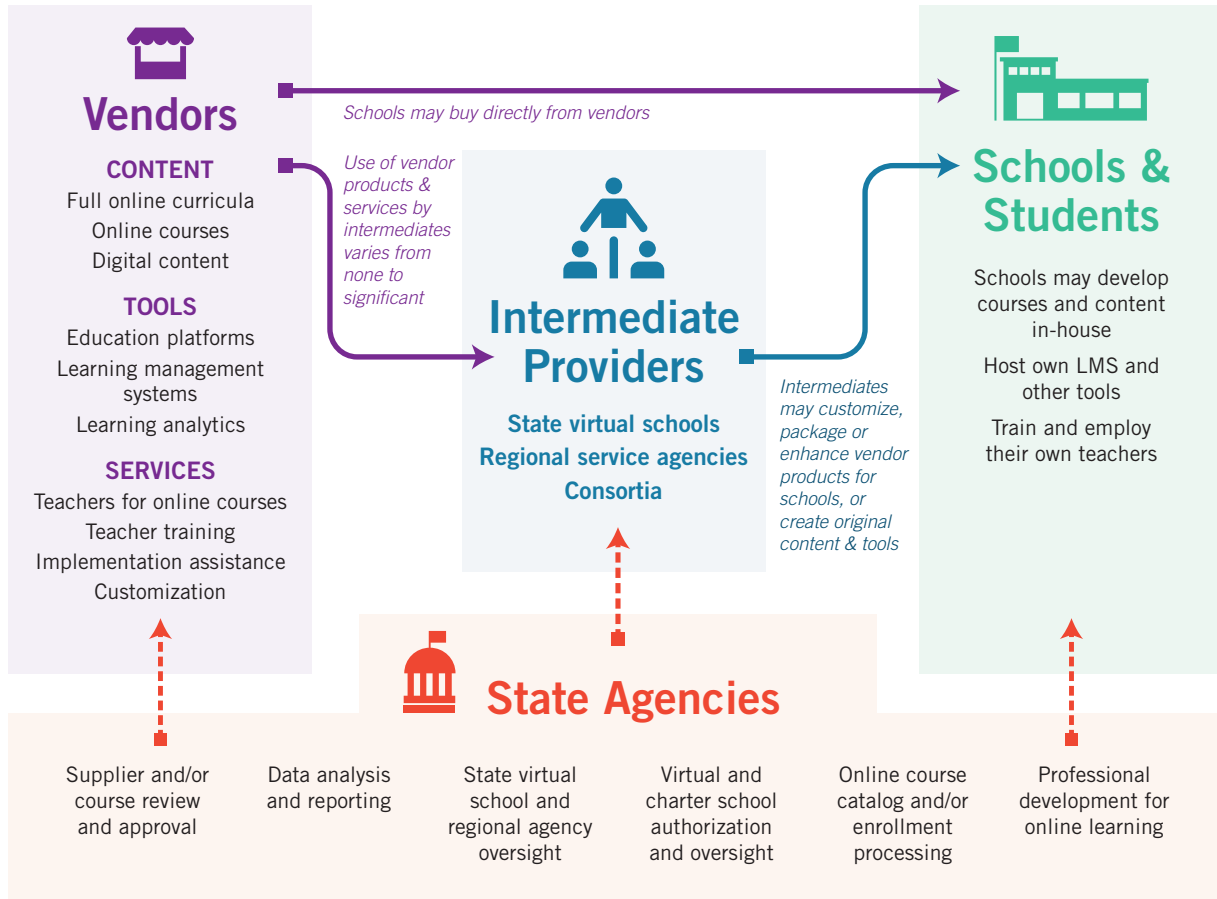
State agencies minimally involved, or not at all, in online learning are typically states in which school districts have a great deal of local control. In local control states, online learning is often localized at the school, district and/or regional service agency level. Some states delegate to and rely on a state virtual school to take the lead in online learning program oversight and regulatory leadership.

Few states provide all of the oversight or services depicted in figure 8, but many perform several of these online learning functions. One of the major functions of actively involved state agencies is the review and approval of suppliers and/or the courses they provide. The goals of course and supplier reviews and approval include, ensuring alignment with state standards, that suppliers are accredited, and that online teacher-led instruction is supplied by highly-qualified teachers certified in that state. Some state agencies require a rigorous review and approval process while others simply require suppliers to complete applications to gain approval. Approvals usually must be renewed annually, but some as infrequently as five years.



FIGURE 8

### State agency oversight and support





## MARYLAND STATE DEPARTMENT OF EDUCATION Course Review and Approval Process

The State Department of Education's Virtual Learning Opportunities Program (MVLO) offers locally developed and vendor-provided online courses approved by the Maryland State Department of Education (MSDE) to all 24 local school systems. Maryland law requires the MSDE to develop standards for the evaluation and approval of online courses to ensure quality and rigor of instruction, accessibility for individuals with disabilities, and alignment with content standards.

In 2012, the MSDE released Process and Procedures for Offering Student Online Courses in Maryland Public Schools. This sets forth school system responsibilities, minimum training requirements for facilitators, an online course review process, the process for converting face-to-face courses to online courses, and MSDE/School System responsibilities in the course approval process. Online facilitators for Maryland sponsored online courses must successfully complete an MSDE-approved online three-credit course followed by a shadowing experience with a mentor facilitator.

The Code of Maryland Regulations (COMAR) defines credit-bearing online courses as those in which "80% or more of instruction is conducted online." Courses that provide less than 80% of the instruction online do not have any requirements other than those that apply to all courses in Maryland. COMAR also requires the MSDE to create online course evaluation and approval guidelines as outlined in the Process and Procedures document; it allows the MSDE to charge a vendor fee of \$1,400 per course evaluation. If an approved contractor or a school system reviews a vendor course, MSDE may charge the vendor a \$360 per course fee for the final evaluation process. MSDE's final evaluation requires that each online course comply with WCAG 2.0 Level AA standards for accessibility. ■

Several state education agencies provide web-based catalogs or other resources where students, parents and counselors can go to review approved online courses or full-time online program providers. This is particularly true in course access states that allow students to take one or more online courses from a provider other than the student's district of enrollment and have their funding flow to the provider. The process for using state agency catalogs to find, select and enroll students in online courses or full-time school is similar across states. The Texas Department of Education's TXVSN program is a good example. The process begins with the student, parent, and/or counselor browsing the TXVSN catalog to select an online course or full-time supplier. The school designated TXVSN "site coordinator" enrolls the student directly with the supplier. At the end of each semester, suppliers report student performance to the school and TXVSN. Suppliers are then paid by TXVSN for successful course completions.

State agency functions may also include oversight of virtual schools and virtual (or cyber) charter schools. This can include monitoring virtual school performance and enforcing enrollment caps in states that have

such measures. In some cases, state agencies act as authorizers of virtual schools, although most states have multiple virtual school authorizers, including school districts and postsecondary education institutions.

The following are state agency examples that illustrate some of the specifics regarding oversight and support services, with varying levels of involvement in online learning.

## *Texas*

State-level online activity in Texas is handled through the Texas Virtual School Network (TXVSN), which provides course access options to students through two programs: a supplemental statewide course catalog of high school courses (including Advanced Placement and dual credit) and the full-time TXVSN Online Schools (OLS) program for grades 3–12. In FY 2015–16 the TXVSN catalog served 5,654 supplemental course enrollments and the full-time TXVSN online schools served 12,205 students.

Texas passed legislation effective in SY 2013–14 that gave students the option to take up to three year-long supplemental online courses through the TXVSN each year to be funded by their district or open-enrollment charter school as part of the student's normal course load; a student may enroll in additional courses but may be required to pay. A normal course load is defined as seven credit hours per instructional year. Districts and open-enrollment charter schools may deny a student's enrollment request if the district or school offers a "substantially similar" course, and have discretion to select the course provider for the course a student requests.

TXVSN course providers offering courses through the TXVSN catalog are responsible for instruction. Receiver districts (student's home district) participating in the TXVSN statewide course catalog approve their students' TXVSN course requests and can deny those course requests per Texas Education Code (TEC), §26.0031, provide ongoing support to local students enrolled in TXVSN statewide catalog courses, and award credits and diplomas. Districts and open-enrollment charter schools serving as TXVSN course providers may seek a waiver from the TXVSN course review and approval process administered by the TEA, but they must certify that the district or charter has verified that each course meets 100% of all TXVSN course standards.

In addition to the TXVSN, several districts, including those in Houston, Katy, Plano, and Irving, have significant online programs that provide online courses for resident students. Students must be physically present at school to be eligible to generate Foundation School Program (FSP) funding for these non-TXVSN courses.

For students in grades 9–12 enrolled in TXVSN catalog courses and the full-time TXVSN OLS program, state funding is generated when a student successfully completes a course provided through the TXVSN, which is defined as having demonstrated academic proficiency of the content for a high school course by earning a minimum passing grade of 70% or above on a 100-point scale, sufficient to earn credit for the course. A student taking one or more courses through the TXVSN catalog may count their participation in the TXVSN course toward eligibility for part-time or full-time FSP funding, presuming the student successfully completes the TXVSN course. Districts may not count more than three year-long TXVSN courses, or the equivalent, per student per school year toward FSP funding eligibility. Authorized

full-time TXVSN online schools are exempt from this funding limitation. Students enrolled in a TXVSN online school are funded at one of three levels: if the student completes at least five credits, the school receives full funding; if the student completes at least three credits, the school receives partial funding; and if the student completes fewer than three credits, the school receives no funding.

Students participating in online courses or programs offered through the TXVSN are not required to be physically present at school to be eligible to generate FSP funding. For grades 3–8, students in full-time TXVSN online schools generate state FSP funding based on successful program completion and promotion to the next grade level. Students must demonstrate academic proficiency by earning a minimum passing grade of 70% or above on a 100-point scale, sufficient for promotion to the next grade level. Funding is equivalent to state funding for a student enrolled full time in a traditional classroom. If a student successfully completes their grade-level instructional program and is promoted to the next grade, the school receives full funding; if the student does not, the school receives no funding.

## *Florida*

Florida has an active state education agency that has been responsible for implementing a long history of legislation supporting online learning. Florida was the first state in the country to legislate that all K–12 public school students have full- and part-time virtual options and that funding follows each student down to the course level.

The Florida Department of Education (DOE) provides technical assistance and support related to state policy and legislation for district and state virtual education options. Specifically, it is responsible for various areas of oversight and/or support services, including:

- Development and management of the approval process of Virtual Instruction Program (VIP) providers for district programs and virtual charter schools since 2009. The DOE developed a renewal process for currently approved providers beginning with the 2015–16 SY. There are five approved VIP program providers as of March 2016.
- Development of the Florida Approved Courses and Tests (FACT) initiative and a new approval process for online course providers to expand student choice and online course options, including MOOCs, fully online courses, and blended courses. There are five approved course providers as of March 2016.
- Managing the Florida Online Course Catalog to support virtual instruction, which launched in July 2014. The catalog includes courses offered by district virtual schools, Florida Virtual School (FLVS), and providers approved by the DOE. The catalog provides a full official course description as well as a description of unique course features by the district or provider, and a method for students to provide evaluative feedback. Completion and passage rates were added to the catalog in 2016. As of March 2017, the catalog included over 20,000 online courses.

In addition to many district programs and full-time online schools, FLVS is the largest state virtual school in the country, accounting for a total of over 2 million course completions since it opened in 1997. In SY 2015–16, enrollments in one-semester supplemental online courses in Florida, including FLVS and a

variety of district programs, exceeded 510,000 course completions. Students taking all of their courses online reached about 23,000.

Florida has a variety of online options for students in grades K–12. Florida Virtual School is the main supplemental online course supplier in the state. In 2000, legislation established FLVS as an independent education entity. Legislation enacted in 2002 and 2003 granted parental rights for public school choice, listed FLVS as an option, and defined full-time equivalent (FTE) students for FLVS based on “course completion and performance” rather than on seat time. FLVS is one of the few state virtual schools in the country that is funded based on successful course completions. Florida students retain the right to choose FLVS courses to satisfy their educational goals (per Section 1002.37, Florida Statute).

**District Franchises of FLVS** allow districts to use FLVS courses and LMS; using their own teachers to offer online courses to students who reside within the district. FLVS also provides professional development and mentoring for district teachers and administrators, and numerous learning resources and tools. The franchises also serve home education and private school students. District franchises enrolled 64,901 students with 83,626 course completions in SY 2015–16.

Through the **Virtual Instruction Program (VIP)**, all Florida school districts offer part- and full-time virtual instruction programs for students in grades K–12. School districts are required to offer one to three virtual options (based on the districts size). Many smaller districts are sharing resources and entering into agreements with regional education consortia to provide their required virtual option. There were 2,708 students in part-time VIP programs in the 2015–16 SY and 2,516 students in the full-time VIP program.

**District Virtual Course Offerings** allow districts to offer online courses for students in grades K–12. In 2013, students were allowed to cross district lines to take online courses from other districts regardless of whether it is offered in their district. There were 14,862 students taking district virtual courses in SY 2015–16.

**Virtual charter schools** give students additional full-time online options. Virtual charter schools are required to contract with a DOE approved virtual instruction program provider to operate the school. Florida had nine virtual charter schools in seven school districts with an enrollment of 1,581 students in SY 2015–16.

## *Minnesota*

Minnesota was among the first states to allow students to choose a single online course from among multiple providers. The Minnesota Department of Education (MDE) reviews and approves online learning providers and tracks enrollments for both supplemental online course enrollments and students in fully online programs.

The MDE engages in a comprehensive standards-based application and internal review process to assure online provider quality and ongoing accountability, as well as eligibility for program expansion. Public schools offering full-time online programs to students in their district boundaries and those enrolling part or full-time students outside of their district are required to become a state-approved

online learning (OLL) provider and publish a full course listing. Only approved OLL providers generate funding. Providers submit a letter of intent, complete a standards-based application, host a site visit, and address any concerns that arise during the application process. Approved providers participate in a three-year continuous improvement process that includes a reflective self-study report. OLL providers submit annual reports to MDE with enrollment information and course completion rates. Course information is updated annually and is available to the public via a searchable database. OLL providers seeking to expand their program require one year of experience and must complete an application process. As of January 2017, there were 33 approved online learning public school providers that represent a mix of consortia, regional service districts, charter school programs, and district programs serving students statewide.

## *Washington*

Washington continues to offer one of the broadest ranges of online options for students of any state in the country. Online programs are operated by a mix of districts, private providers and consortia, some of which that offer both supplemental and full-time online options. By January 2016, the Office of Superintendent of Public Instruction (OSPI) and its Digital Learning Department (DLD) had listed 33 approved multi-district online school programs providing supplemental and full-time options statewide or regionally, and 81 single district online school programs. There were 22 approved online course providers serving students statewide. The DLD approves all online school programs for the state: single district online school programs which are poised to serve only in-district students and multidistrict online school programs which are poised to serve students statewide. Although there are no private full-time online schools approved by the DLD, many districts partner with private and approved online course providers to operate their own approved full-time online school programs.

Washington gathers one of the more comprehensive statewide datasets about online learning in the U. S., and publishes the Online Learning Annual Report to the Legislature at the beginning of each year. The OSPI and DLD collect online learning data from three state-level sources, 1) the monthly Alternative Learning Experiences (ALE) enrollment report, 2) Comprehensive Education Data and Research System (CEDARS), and 3) the DLD's online course catalog and registration system. Blended learning programs are not included in state reporting mechanisms, though numerous school and district blended learning initiatives exist.

## **State Agency and Local Control**

Although the largest state in the US, with over 6 million public school students, the California Department of Education (CDE) has minimal direct involvement in online learning. District and county offices lead the way providing in online course options and full-time online schools. Online learning oversight is dispersed across different offices within the CDE.

Many of the states in the Northeast US support local control and state agencies play minimal roles in oversight and support of online programs. New York, Connecticut, New Jersey and other eastern states have comparatively little involvement or oversight of online learning at the state agency level, with most online courses being provided by regional service agencies and local schools and districts. The Pennsylvania state education agency tracks cyber charter school activity, but does not play a role in supplemental online learning.

# 3 BRIEF HISTORY OF ONLINE LEARNING



IT'S BEEN ABOUT TWO DECADES SINCE THE FIRST INTERNET-BASED K-12 ONLINE PROGRAMS BEGAN. Some of these include the Laurel Springs online private school, which dates to the early 1990s, the Virtual High School, launched with a federal grant in the mid-1990s, the Florida Virtual School (FLVS), which grew out of a Florida Department of Education grant to two districts in 1996, and several small district online schools, such as the Monte Vista online academy in Colorado, which launched in 1997. These pioneering online schools and programs paved the way for numerous others, evidenced by the subsequent proliferation of state virtual schools, providing online courses to schools and districts, and vendors and other organizations providing supplemental courses as well as establishing fully-online schools.

This has been more recently followed by the rapid growth of online and digital learning programs implemented at the school and district levels directly. This shift has been enabled in part by the maturing of technology and products within the digital learning industry, making them more affordable and easier to implement and manage at local levels.

But to trace the roots of online learning primarily to Internet-based programs would be a huge mistake. In fact, the origin of online and digital learning pre-dates the World Wide Web by many years, going back to the beginning of “computer-assisted instruction” in the 1960s.

## The roots of computer-assisted instruction

The history of computer-assisted instruction (CAI) is long and involved, and includes many organizations. Any attempt to detail its history will inevitably leave out some important developments. Most accounts, however, would point to the PLATO project at the University of Illinois Urbana-Champaign that started in 1960 as the major milestone in the evolution of using computers to deliver instruction. The PLATO system was used to deliver instruction in topics ranging from French to Organic Chemistry and advanced military training. In the early 70s super computer company Control Data Corporation took over the project. By then the PLATO system developers had added a powerful online course authoring language called PLATO Tutor, email (Personal Notes), message boards, chat rooms (Talkomatic), instant messaging (Term-Talk), and remote screen sharing. The PLATO user terminals even had touch screens. First major uses of the PLATO system as well as some other early CAI systems were in higher education, corporate and military training and simulation environments.

The Control Data PLATO project evolved over time and eventually gave birth to two of the most widely adopted product lines for personal computers and Internet usage, PLATO Learning (now Edmentum) and NovaNet (acquired by, and recently retired, by Pearson). These systems and others like them have been used in tens of thousands of schools across the country, primarily to provide intervention and remediation for struggling students. Because these students were often recovering credit or retaking material for other reasons, they worked through the computer material with some help from a teacher, but with limited interaction with the teacher and little or no interaction with other students. Credit recovery was a major driver of early CAI programs in schools, and credit recovery remains a major element of the digital learning landscape.

## The roots of online learning

Unlike CAI, which began with a focus on in-classroom and learning lab use, the type of online learning we are accustomed to today in K–12 schools had its origins as a form of distance education. The early forms of distance learning were geared toward homebound students (and vocational education at a postsecondary level), and used pre-World Wide Web delivery methods including print materials, CD-ROMS, and video conferencing to deliver instruction and facilitate communication. As distance learning evolved with the advance of the Internet, online courses were developed for Advanced Placement students, or to provide college preparatory courses that were not available in rural or inner-city schools. The growth of online education in postsecondary and professional development



contributed to the legitimacy and growth of online learning in K–12. Early forms of online learning initially centered on translating a complete classroom course syllabus to a distance education environment, including similar content and assignments, and then grew to allow for teacher-student interactions also similar to a traditional classroom. Examples of this type of early online learning program were often created in rural states such as Alaska, North Dakota and Nebraska. Online schools have innovated in a variety of ways, but in most cases they remain based on teacher-student interaction, and in some cases student-student interaction.

Because online courses often serve as an alternative to regular classroom instruction, and in some cases draw students out of traditional schools, education policy and oversight provisions have evolved to address online learning, while very few regulations address CAI and other uses of education technology. To this day, extensive policies specific to online learning govern online schools, but relatively few policies specific to digital learning govern CAI.

## The current digital learning landscape

The key benefits of CAI and online learning were largely complementary, and in recent years online learning and CAI have converged. From a supplier standpoint, Pearson Education exemplifies this evolution: it acquired Connections Education and now offers both Connections courses (roots in online learning) and other online content with roots in CAI. School districts are providing both types of options, and they are often both managed at a district level by one district office. In the Clark County school district in Nevada, for example, the online learning program serving students at home and in schools is closely tied to efforts to support district schools in their move to digital content and devices. This dynamic is increasingly common in traditional school districts.

Much like today's musical artists who often sample other music to re-mix, re-envision, and re-create new songs and sounds, practitioners today are taking different elements of digital learning, with varied backgrounds and sources, for use in their own schools, programs, and classrooms. The online learning and CAI roots of different types of digital learning have been obscured as each has appropriated elements of the other. Three additional elements further complicate the landscape. First, confusion exists between entities that are schools—those that enroll students and provide a full range of courses and associated services—and those that are suppliers of online courses, tools, and teaching, to schools and also to families who are buying courses and instructional materials. This confusion has been exacerbated by the fact that suppliers may be companies, nonprofit organizations, or public agencies, and that some suppliers have the word “school” or “academy” in their name. Second, some entities are suppliers and also own and operate schools. Finally, in some school districts the line between school and supplier becomes blurred, because the district runs a program that serves students directly, but the program does not have school code and students are officially enrolled in another district school.

Given these areas of complexity, understanding the distinction between school and suppliers is critical for comprehending the digital learning landscape. For online and digital learning, **suppliers** are entities that provide online and digital learning products and services to schools, and sometimes directly to students, but usually coordinated and monitored by a school. A supplier is not responsible for a student's academic activity and performance and is not authorized to do so. They do not own the transcript of a student, administer state assessments, assign grade levels, or offer diplomas. Some suppliers, such as state virtual schools, offer courses using teachers employed by the state virtual

school, but it is the student’s home school that maintains responsibility. The supplier, offering the online course and perhaps the teacher, is essentially a contracted outsourcing of instructional services to a third-party entity. **Schools**, on the other hand, are entities, authorized via state policy, that have the primary responsibility for a student’s education. Schools include traditional public, charter, and private schools; independent study and similar non-traditional schools that enroll students; and online, onsite, and blended schools. Only authorized schools can grant credit towards grade level advancement and confer diplomas.



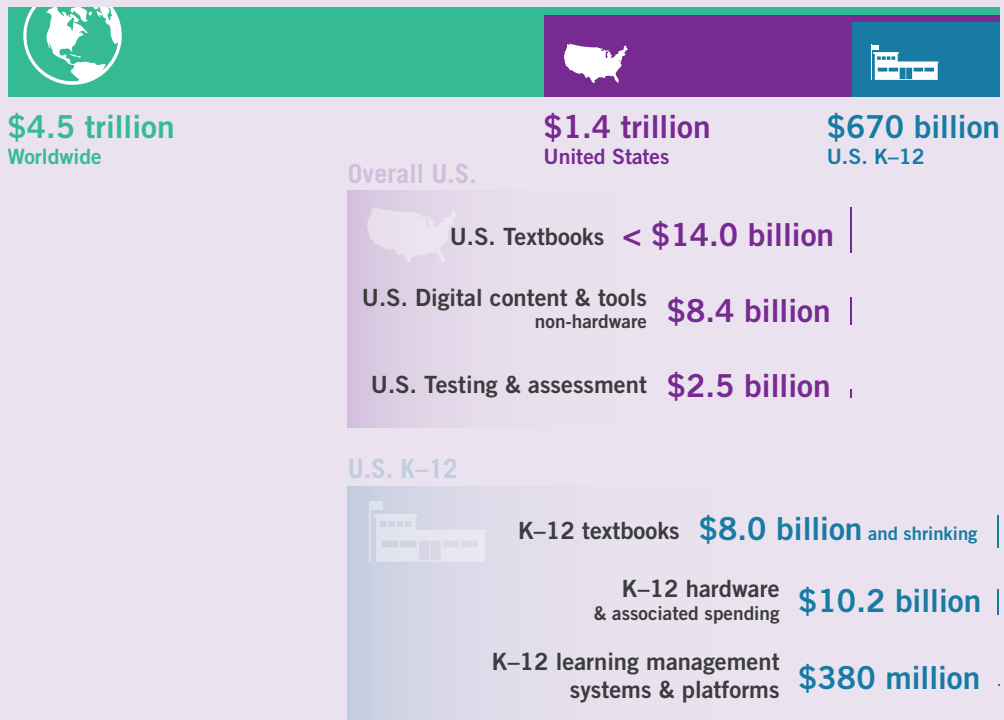
## How big is the education industry?

One way to understand the size of the education industry is to look at the amount of money spent or generated on an annual basis for various segments of the industry. This helps provide a perspective on just how big the education industry is and how the group of education companies serving the digital learning market fit into the overall picture.

If you add up all the annual funding and revenue going to schools, from K–12 through graduate school, plus all the revenue generated by all the for-profit and nonprofit education companies, the aggregate size of the education industry is the second largest industry on earth, second only to healthcare—also second to healthcare in the United States. So, what are the numbers? Below are some annual estimates from various sources based on 2014–15 data.

A fairly significant portion of the vendors in the online and digital learning segment fall in the digital content and textbook segments. ■

### Size of education industry



# Appendix A: Methodology

Data reported in *Keeping Pace with K–12 Online Learning 2016* focuses on the 2015–16 fiscal year for school, district and state organizations. Most state educational systems work on a fiscal year from July 1 to June 30, some start fiscal years August 1 and fewer still start fiscal years September 1. In the past, *Keeping Pace* has reported data based on “school year,” defined by the report as summer and fall in one year and spring of the following year. By conforming to the fiscal year reporting of the organizations, *Keeping Pace* is getting even more reliable data from organizations profiled in the report.

Online and digital usage data and information was collected directly from state education agencies, state education statistics databases, state reports, regional education services agencies, and a sample of large and small school districts and schools.

The Evergreen Education Group research team attempts to collect statewide online learning usage data at the state agency level where possible. In many states online programs are not required to report online enrollments and associated information. Also, some states that do collect such data did not have it available in time to be analyzed and published in this report.

Data was collected directly from online learning organizations—including state virtual schools, consortia, regional service agencies, state agencies, vendors and districts—through data collection survey instruments and personal interviews with key representatives from each organization.

In order to show a supply-side view not available through traditional data collection techniques, interviews were held and data was collected from a variety of product and service providers, including small and large education publishers, content providers, software tools providers, and education management organizations.

Evergreen also utilized a range of secondary research from sources, including recent research from foundations, the National Center for Education Statistics (NCES), the National Alliance for Public Charter Schools, and several others.

Any errors or omissions, however, are fully the responsibility of the Evergreen Education Group.

## Appendix B: Definitions

**Digital learning** is any instructional practice in or out of school that uses digital technology to strengthen a student's learning experience and improve educational outcomes. Our use of the term is broad and not limited to online, blended, and related learning. It encompasses a wide range of digital tools and practices, including instructional content, interactions, data and assessment systems, learning platforms, online courses, adaptive software, personal learning enabling technologies, and student data management systems.

An **online course** is a teacher-led education experience that takes place over the Internet, with the teacher and student separated geographically, using an online instructional delivery system to access course content and allow communication between the teacher and student and between students. It may be accessed from multiple settings (in school and/or out of school buildings). A state certificated teacher is the teacher of record for the course.

A **hybrid course** is one where the majority of the learning and instruction takes place online, with the student and teacher separated geographically, but still includes some traditional face-to-face "seat time." In hybrid online courses the online instructor remains the teacher of record even though the student spends time with additional educators.

A **course enrollment** is one student in a single semester long-course or equivalent (.5 credit).

A **unique student** is one individual student, who may take any number of courses.

**Online programs** work directly with students and deliver online learning services, but are not "schools." Online programs may include state virtual schools, districts, consortia, and other suppliers.

**Supplemental online courses** are used to augment a student's educational program or campus class schedule. Students taking supplemental online courses usually take about 1 to 2 online courses in a school year.

An **original credit course** is one taken by a student for the first time, and is credit bearing. These may be core or elective courses. Original credit courses are also referred to as initial credit or first-time courses.

**Credit recovery** refers to "a wide variety of educational strategies and programs that give high school students who have failed a class the opportunity to redo coursework or retake a course through alternate means, and thereby avoid failure and earn academic credit." (Glossary of Educational Reform)

**Charter schools** provide free, publicly funded elementary and/or secondary education to eligible students under a specific charter granted by state-designated charter authorizers or an appropriate authority. Charter schools may have physical campuses, be online, or include elements of both.

**Virtual schools** are full-time online schools, sometimes referred to as cyber schools, which do not serve students at a physical facility. Teachers and students are geographically remote from one another, and all or most of the instruction is provided online. These may be virtual charter schools or non-charter virtual schools. Online schools typically are responsible for ensuring their students take state assessments, and for their students' scores on those assessments.

**Full-time online students** are those that take their entire course load online.

**Private schools** are supported by a private organization or private individuals rather than by the government. Private schools do not receive significant federal, state or local government funding, as opposed to a public school, which is operated by the government or in the case of charter schools, independently with government funding and regulation. The majority of private schools in the United States are operated by religious institutions and organizations.

**District statewide or regional operators** are districts that supply online courses, instruction, technology and other services to schools both within and outside the originating district. These are sometimes referred to as multi-district online programs.

**Regional service agencies** (RSA) are “public entities created by state statute, to provide educational support programs and services to local schools and school districts within a given geographic area” (Association of Educational Service Agencies). RSAs function as a level of education agency between the district and state. Regional service agencies go by many names, including intermediate school districts, Boards of Cooperative Educational Services (BOCES), intermediate units, educational service centers, Cooperative Education Service Agencies (CESA), county offices and others.

**Intermediate suppliers** deliver online courses and services to schools and districts, usually in a single state. They may develop original online content, license content from vendors, or use a combination of original and vendor developed content, which is most often the case. Intermediate suppliers are often some form of governmental entity, including state virtual schools, district statewide and regional programs, regional services agencies, consortia, and postsecondary online schools serving largely high school students.

**Teacher of record (TOR)** is an educator who is responsible for a student's learning activities that are within a subject or course, and are aligned to performance measures, including assignment of the student's final grade in a course. (Center for Educational Leadership and Technology)

**Suppliers** are any entities that deliver online courses, instruction, technology tools and/or services to support online learning. Suppliers may be for-profit vendors, education organizations or agencies (re. state virtual schools, regional services agencies), or nonprofit organizations.

**Vendors** are companies or organizations in the business of developing and delivering a broad range of products and services to the education industry. Vendors deliver online courses, instruction, technology infrastructure and other online services directly to schools and districts for license or purchase, and may provide those same services to intermediates. Vendors may include companies that provide online content, teachers, learning management systems, learning analytics, teacher training and other online products and services.

**State virtual schools** are intermediate supplier organizations that deliver online courses, instruction and other online learning services to schools and districts across the states in which they operate. State virtual schools are usually created by legislation or by a state-level agency, employ staff, and receive state appropriation or grant funding for the purpose of providing online learning opportunities to students across the state. They also may charge course fees to help cover costs. The organizations may be administered by a state education agency, but may also be 501(c)(3) nonprofits, charter schools, or organizations contracted to operate the state virtual school by the state agency.

**Blended learning** is “a formal education program in which a student learns at least in part through online learning, with some element of student control over time, place, path, and/or pace; at least in part in a supervised brick-and-mortar location away from home; and the modalities along each student’s learning path within a course or subject are connected to provide an integrated learning experience” (The Clayton Christensen Institute for Disruptive Innovation). In most blended learning models, the teacher of record is located in the school building, whereas in online learning the teacher of record is almost always remote, not in the physical school.

**Dual credit** courses are courses in which a student earns credit from the postsecondary institution offering the course, as well as accruing credit at the student’s home school.

**Competency-based learning** allows students to advance upon mastery of course content. Competency-based education is based on competencies that include explicit, measurable, transferable learning objectives that empower students. Assessment is meaningful. Students receive timely, differentiated support based on their individual learning needs. Learning outcomes emphasize competencies that include application and creation of knowledge along with the development of important skills and dispositions. (iNACOL, 2013)

**Course access programs** and policies (sometimes called course choice) allow students to take one or more online courses from a provider other than the student’s district of enrollment and have their funding flow to the provider.

