BLENDED LEARNING

the best of both worlds

How the integration of face-to-face and digital learning can lead to greater
educational equity, opportunities, & efficiencies for Colorado schools and their students.

By: Amy Berk Anderson and Amanda Skrzypchak | Donnell-Kay Foundation | www.dkfoundation.org

DK DONNELL-KAY FOUNDATION

INTRODUCTION

Can you imagine functioning in today's society without internet connectivity, mobile devices, computers and other digital tools? In the professional world, it would be impossible to communicate and be productive in the workplace without access to a host of digital devices and the internet. Yet, when one walks into a typical public school in our state, it feels like a flashback to the 1950s. Computers may or may not be available for all students to use and too many schools in our state lack access all together to mobile or internet connectivity in their communities, resulting in growing education inequities between students learning in connected versus unconnected schools.

This is not a phenomenon unique to Colorado. In recent years, a number of popular education books have questioned why today's schools are so far behind other aspects of our society when it comes to the use of digital connectivity and learning. This argument was made most notably in the book *Disrupting Class* (Christensen et al., 2008), also in *Liberating Learning* (Moe &Chubb, 2009), and more recently, *the same thing over and over* (Hess, 2010). These authors make compelling arguments about why we should embrace innovation and digital learning in education in order to remain a globally competitive society. They discuss the challenges that teachers face in tradition-al classrooms serving learners with various academic needs and argue that technology can be used to more accurately assess and create learning opportunities that are more personalized and allow students to progress at their own pace. A new report from The Innosight Institute, Public Impact, and The Charter School Growth Fund, *The Rise of K-12 Blended Learning,* identifies leaders in this arena—those who demonstrate what is possible—and push our thinking on what schools can look like today and in the future.[1]

These authors have inspired many to advocate for more online, blended (combining face-to-face and online learning), and other digital learning in our schools. But what has proven to be challenging for many state policy and education leaders is figuring out how to get from this somewhat antiquated place we are today to one that is more reflective of where we should be given the advancements in technology and

[1] *www.innosightinstitute.org*

productivity that have occurred over the last decade. A report released in late 2010
that is geared towards state policymakers provides some direction in this area. The
Digital Learning Council's (DLC) report, *Digital Learning Now,* suggests ways
that states can create "policies that will integrate current and future technological
innovations into public education."[2] The report identifies 10 Elements of High
Quality Digital Learning and offers policy directions within each of the elements for
states to consider. For more discussion about this report from the DLC, including
how Colorado may fit relative to the recommendations, see Appendix A.

The Donnell-Kay Foundation strongly encourages education and policy leaders in
Colorado to develop a vision and strategy for moving our state to a place where all
students have access to high quality learning options, regardless of where they live or
the school they attend. We believe that this expansion of digital and online learning
will begin to alleviate significant inequities that exist within our system today
between students who have access to high quality teachers and a diverse array of
courses and schools and those who lack such access because they live in communities
that struggle to attract talent or lack the resources to provide the variety of options
that a wealthier or larger district can offer.

The Donnell-Kay Foundation strongly encourages education and policy leaders in Colorado to develop a vision and strategy for moving our state to a place where all students have access to high quality learning options, regardless of where they live or the school they attend.

The purpose of this paper is to share where our state is today in terms of its digital and
online offerings for public school students, discuss why a shift to a blended model of
learning that combines face to face, online and digital learning, is an important next
move for Colorado, and provide policy direction and innovative ideas to consider as
the leaders of our state grapple with how to expand student access to quality online
and digital learning. The first part of the paper provides an overview of the current
environment in Colorado for digital learning: how many students currently utilize
online learning at some capacity, the options that exist, the quality of current online
offerings, and some of the strengths and challenges of Colorado's current system
for delivering content to students online. The second section identifies emergent op-
portunities for Colorado in the areas of blended and online learning. The final section
presents policy recommendations and identifies next steps for our state to move our
public schools further into the digital age.

SECTION I: ONLINE LEARNING IN COLORADO TODAY

Students in Colorado learn in a variety of classroom settings: traditional school buildings, blended settings (combination of face-to-face instruction and online learning), and full-time online classrooms. However, the overwhelming majority of Colorado's 843,316 students (just over 98%) attend public schools located in brick and mortar buildings. The concept of blended classrooms is new, primarily district-based, and serves a small (but unknown) number of students at this time. Also a small subset (yet growing) percentage of Colorado students attend full-time online schools: 1.8% of the total student enrollment in 2010-11.[3]
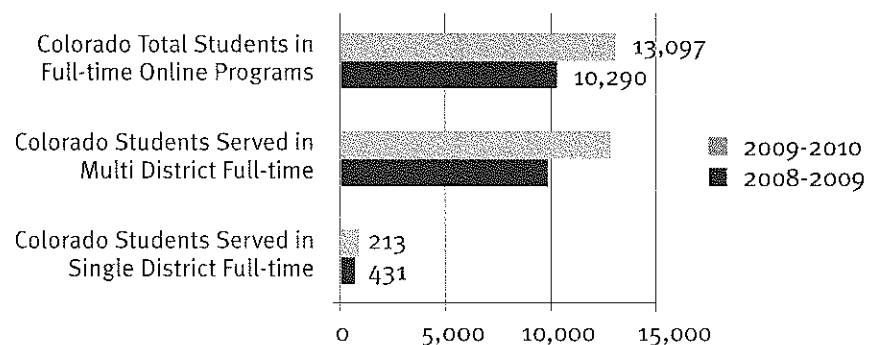
FULL-TIME ONLINE SCHOOLS: A GOOD OPTION FOR SOME, BUT NOT FOR ALL

Enrollment in full-time online schools grew 15% from 2009-10 to 2010-11 and, as shown in Exhibit 1, grew by 11% between 2008-9 and 2009-10.[4]

Currently, two types of full-time online school options exist for Colorado students:

- Single-district full-time online schools, designed primarily for students who want a full-time online school and reside within a given district. The Colorado Department of Education (CDE) Division of Online Learning website identifies 12 districts in the state that are currently operating full-time online schools.

- Multi-district full-time online schools, designed to serve students across the state from multiple school districts. Most of these schools in Colorado are charter schools. The CDE Division of Online Learning website identifies 23 approved multi-district online schools.

Exhibit 1: Colorado Student use of Single and Multi District Full-time Online Programs in 2008-2009 and 2009-2010 School Years[5]

	2009-2010	2008-2009
Colorado Total Students in Full-time Online Programs	13,097	10,290
Colorado Students Served in Multi District Full-time		
Colorado Students Served in Single District Full-time	213	431

[3] www.cde.state.co.us/communications/Releases/20110111pupilcount.html

[4] www.cde.state.co.us/communications/Releases/20110111pupilcount.html

[5] http://www.cde.state.co.us/onlinelearning/download/2010_AnnualReport_OnlinePrograms.pdf

While the total number of students in full-time online schools grows each year, only a small subset of the overall student population is able or interested to attend a full-time online school. For example, Colorado is in a group of states (along with OH, PA, WA) that have had full-time online schools for about 10 years but still serve fewer than 2% of the total student population. No state in the nation has more than 2% of its student population enrolled in full-time online schools.[6]

Yet, despite the fact that the overall population served is relatively small, full-time online schools provide families with another option for public school choice, which is important and necessary for many students. Some of those who are well-served by full-time online schools include students who travel frequently; students who miss a lot of school because of illnesses or are pregnant or parenting; students who need only a small number of credits to graduate or are too old for a traditional school setting; students who are very self-motivated and thrive in a setting where they can move at their own pace relatively independently; or students whose parents prefer to home school. With proper parental or other support, full-time programs can also be a good option for other students, such as those with special needs.

Full-time online schools also present certain challenges. A significant problem in Colorado is the academic performance of students in online schools relative to their peers in brick-and-mortar schools (Exhibit 2).

Exhibit 2: Percent of Students Scoring Proficient or Advanced on 2008 and 2009 CSAP Exams in Full-Time Online Schools Relative to All CO Public Schools (statewide averages)
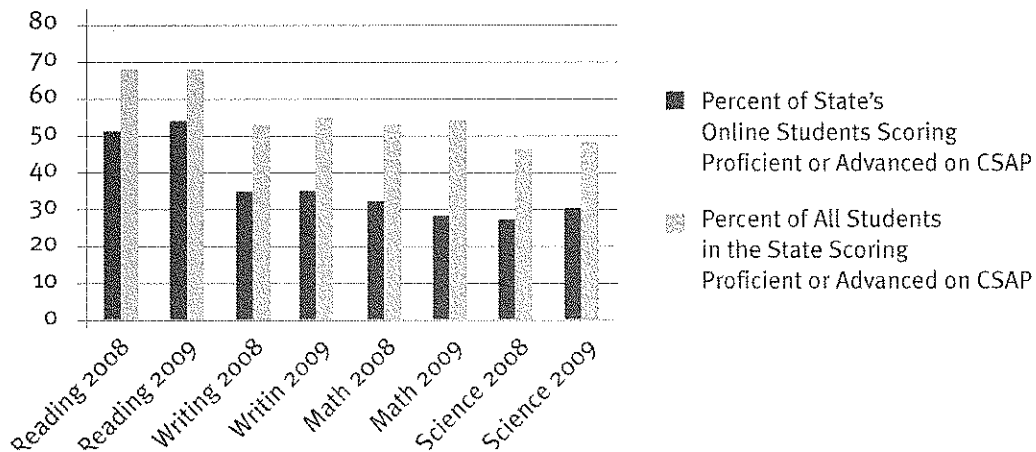
Given the low performance of students in online schools today, Colorado must ensure that current and future efforts to expand online learning (whether it is full-time or supplemental) produce strong student results and enhance the learning experience for the students served.

Another important challenge centers around how to hold schools serving high percentages of students who are defined by the state as "at-risk" – Alternative Education Campuses (AECs) – accountable in an equitable fashion, given the challenges these schools face with mobility and other issue related to the population they are serving. For example, the State's current measures of assessing school performance (using the Colorado CSAP as displayed in Exhibit 2) do not work well for many of these AECs, which includes a number of full-time online schools. The CDE is working with these schools to develop a new accountability framework for AECs; however, this work has been progressing slowly, leaving it challenging right now to hold AECs accountable for student results. This work needs to be finalized by the state so that districts and charter authorizers can measure the quality of their AECs and the state can report on AEC results as part of the School Performance Framework.

Despite these accountability challenges, a number of full-time online schools are graduating students from high school who might otherwise not have graduated or be served at all in schools at this time. In order to serve these students better, some of these programs are moving to a more blended model of delivery.

SERVING STUDENTS IN ALTERNATIVE EDUCATION CAMPUSES WITH A BLENDED APPROACH

A growing population of students attending full-time online programs are students who have dropped-out of brick and mortar schools, are over-age/under-credit, or have other needs that require them to attend a program with flexible hours (e.g., work in order to provide for a family, pregnant or parenting teens). For many of these students, full-time online programs can be a very good option to get them through high school. However, many of these students also require some additional supports to deal with emotional and learning needs and to graduate well prepared for what is next in their lives.

For this reason, a blended learning model that provides opportunities for students to come together and meet face-to-face with supportive adults may be a better way to serve students in AECs. Currently, selected providers are offering some blended-type models for alternative education students in a couple of ways:

- Creating blended programs that operate within a given district (that primarily serves students from only that district), or

- Running multi-district online schools that are authorized to operate learning centers or drop-in centers. Drop-in centers may not provide face-to-face instruction in their centers. They can, however, provide non-academic wrap-around support for students enrolled in their full-time online schools. Learning centers may also provide such services and they can provide face to face instructional support for students. In order to operate learning centers, online schools must sign Memorandums of Understanding (MOUs) with school districts in various parts of the state where they would like to establish these learning centers. Drop-in centers do not require MOUs but offer only very limited services to students as compared to a learning center.

While some districts bristle at the thought of having multi-district blended-type programs like this on their "turf", others see them as an opportunity to serve students who have already dropped out or are on their way out of the system - a population that school districts currently struggle to serve well.

SUPPLEMENTAL ONLINE PROGRAMS: A LIMITED SUPPLY OF OFFERINGS FOR COLORADO STUDENTS

Supplemental online courses allow students to take courses that might not be offered by their home district or provide students the option of taking a course online instead of in a traditional classroom setting. A number of "private pay" options exist for students, such as those who wish to take an online Advanced Placement course if their parents can afford the fee. However, these private online courses are typically limited to students who can afford them. In some cases, students in Colorado can access supplemental online courses that their district offers or pays for on their behalf. For example, a small number of districts partner with Colorado Online Learning to provide high school students with access to selected supplemental online courses.

In addition, a couple of larger districts in the Denver metropolitan area (e.g., Cherry Creek and Jefferson County) offer secondary students the opportunity to create more flexible and personalized learning opportunities by integrating online courses into their traditional high school schedules. This allows students to combine online learning and traditional classroom-based learning to meet their unique needs (e.g., to take courses that might not be offered in their district and/ or at the time the student wants to take it, to retake a course or catch up on courses that the student might have missed previously, etc.).

While this move to offer supplemental courses is headed in a promising direction, because it provides students with more choices, the impact thus far is limited to a relatively small number of students in our state. For example, of Colorado's over 800,000 students, just over 1,100 of them were served by Colorado Online Learning (COL) in 2009-10 (and COL's total enrollment is capped at 1,400 students per year). And, district-initiated efforts to offer supplemental courses are limited to only a couple of metro-area districts.

In reality, very few schools in CO are using online or other technologies to their full capacity, if at all, and choices are very limited for kids statewide. As a way of integrating more online and digital learning with public education, more schools and districts are looking to a blended learning model which is discussed in greater detail in the next section.

While this move to offer supplemental courses is headed in a promising direction, because it provides students with more choices, the impact thus far is limited to a relatively small number of students in our state.

SECTION II: A MOVE TO BLENDED LEARNING

The previous section identified some of the opportunities and challenges of full-time online and supplemental online schooling. Before making the case for blended learning, it is important to note some of the challenges of the current "brick and mortar" style of schooling that exists for most students in our state.

CHALLENGES WITH CURRENT SYSTEM OF "BRICK AND MORTAR" LEARNING IN COLORADO

Within the Denver metro-area, students can choose from a variety of public schools (neighborhood, charter, magnet, full-time online) and private schools. Students outside the metro area, on the other hand, have fewer choices available to them. There is a limited supply of private and public school options in smaller communities; and typically, choices are limited to full-time online or a local public school (which they still might need to sit on a bus for extended periods in order to attend this assigned school). In addition to being limited by the types of schooling available to them, students in various underserved communities (urban and rural) also lack access to high quality teachers and diverse course offerings, as compared to their counterparts in suburban and more affluent urban areas.

Of Colorado's 178 school districts in the state, only 55 of them offer Advanced Placement courses for their students during the 2008-2009 school year and the range of course offerings within these 55 districts varies significantly. Students in Cherry Creek have access to 30 AP courses whereas students in Bennett 27J have access to 2 AP courses. And students in 70% of Colorado's school districts (123 districts), have no access to AP courses through their local schools (unless their parents choose to pay for a private tuition online AP course for their child).[7]

In a typical Colorado public school, students attend school in a building each day, they receive instruction from teachers who work in that building, and they move through their coursework at the same pace as their peers of similar age. Schools are funded based on how many students show up on October 1st each year and most are closed in the summertime. While this model of schooling may still work for a reasonable number of students, students who don't fit in to this model can lose motivation, because what they are learning or how they are learning isn't engaging or relevant to them. They may slip between the cracks because their individual learning and personal needs aren't being met. Or, they may struggle to keep up with (or feel dragged down by) their peers who are learning at a different pace. Additionally, students in this traditional model are limited to the instructors who work in that building, the quality of which varies from school to school. And for students who need flexibility, this type of school doesn't work well for them (e.g., students who may be absent for extended periods of time due to illness, pregnancy, athletic or other professional opportunities, family travel, etc.).

Adults who walk into a typical school in our state tend to feel comfortable knowing that the way that these schools are organized and run, by and large, reflects how they were taught as children. However, even for those students for whom the traditional model may be working reasonably well, today's students are growing up in a very different time than their parents and grandparents. Many students are plugged into mobile and online devices given any opportunity (and so are their parents as part of their professional and personal lives). Yet, while in school during the day, they are often asked to un-plug and learn with relatively little use of technological resources.

As called for in the *Digital Learning Council's* Digital Learning Now report (www.digitallearningnow. com/), in order for our kids to be competitive and successful in our global economy, we need to move from a school system that is exclusively "brick and mortar" bound and based on seat time, building schedules, and age-based groupings to one that blends face to face with digital learning and is more student-centered, flexible, and embraces the skills, creativity, and technologies that will best prepare our kids for success in the global economy.

BLENDED LEARNING: WHAT IT IS AND WHY THIS IS A GOOD TIME FOR COLORADO TO CONSIDER IT FOR THE STUDENTS IN OUR STATE

Whereas traditional brick and mortar programs may fail to embrace the opportunities available to us in this digital age and full-time online schools can't serve every student in our state, blended learning is emerging as a "the best of both worlds" for schooling in our country. It provides an opportunity "to develop and transform education by moving digital learning to the forefront of education and away from the niche role it plays today." [8]

Blended learning is a relatively new concept in public education. A major benefit of blended learning is that it is more student-centered in its approach, allowing students and schools to use time flexibly and resources differently than has traditionally been the case. Given its infancy as a concept, various definitions for and approaches to this type of learning exist.

Whereas traditional brick and mortar programs may fail to embrace the opportunities available to us in this digital age and full-time online schools can't serve every student in our state, blended learning is emerging as a "the best of both worlds" for schooling in our country.

[8] edreformer.com/2010/08/digital-learning-=council-press-release/

The 2010 *Keeping Pace* report defines blended learning as "an educational practice that combines elements of online and brick-and-mortar teaching and learning."[9] *The Rise of K-12 Blended Learning* report identifies six models of blended learning occurring across the country today (Exhibit 3).

Exhibit 3: Six Models of Blended Learning (Horn & Staker, 2011, www.innosightinstitute.org)

Model	Example of a program that typifies this model	Other examples from among those profiled
Face-to-Face Driver	**Leadership Public Schools** allows Hispanic students who are struggling to learn English to sit at computers in the back of the classroom and catch up with the traditional class at their own pace by using an online textbook that provides Spanish-English translations.	• Big Picture Learning • High Tech High
Rotation	Class periods at **Carpe Diem Collegiate High School** are 55-minutes long. For each course, students spend one period in an online-learning room for concept introduction and one period in a traditional classroom for application and reinforcement. They complete two to three rotations per day.	• Rocketship Education • KIPP LA (Empower Academy) • K12 (2-day hybrid)
Flex	Each of **AdvancePath Academics'** dropout-recovery academies features a computer lab, where students spend most of their time learning online. But face-to-face, certified teachers also call the students into an offline reading and writing zone or small-group instruction area for flexible, as-needed help.	• San Francisco Flex Academy • Miami-Dade County Public Schools (iPrep Academy)
Online Lab	Faced with a teacher shortage, Miami-Dade County Public Schools turned to **Florida Virtual School's Virtual Learning Labs** for help. Students complete courses online at their traditional school under adult supervision, but with no face-to-face instruction.	• Metropolitan Nashville Public Schools (Virtual Learning) • Riverside Unified School District (Riverside Virtual School)
Self-Blend	Alison Johnson, an 11th grader in Detroit, Mich., self blends by completing a **Michigan Virtual School** AP Computer Science course in the evenings after she gets home from her traditional high school, which does not offer this course.	• Florida Virtual School • Jesuit Virtual Learning Academy • All online schools that offer a la carte courses that can be taken remotely
Online Driver	Students at **Albuquerque Public Schools' eCADEMY** meet with a face-to-face teacher at the beginning of the course. If they maintain at least a C grade, they are free to complete the rest of the course online and remotely, although some choose to use the onsite computer labs.	• EPGY Online High School • Northern Humboldt Union High School (Learning Centers)

It is important to note that blended learning is not just about integrating online content or using cool new technologies. As is the case in any quality educational setting, blended learning requires an effective teacher to guide and support student learning.[9]

The *Keeping Pace* report also notes that "blended learning should significantly expand or transform instruction and learning" (www.kpk12.com). As such, while it is necessary to begin to define and put some parameters around what blended learning might look like today, in order to help people figure out what options to provide and take advantage of in their communities, it is equally important not to limit blended learning by adopting a fixed and rigid definition.

WHY NOW FOR BLENDED LEARNING?

Today's students want learning experiences that are relevant and engaging. A 2009 survey of students conducted by the non-profit organization, Project Tomorrow ("Speak Up 2009") points to students' desires to have learning that is personalized through the use of technology. The survey also found that students enjoy online learning and find that they are more connected to school through such experiences. A key challenge is that the adults who teach these students are often less tech-savvy and require resources and support to keep up with their students. As the authors of the Speak Up report state:

> "These free-agent learners, are not waiting for their schools to catch up with them. They are, in fact, adopting and adapting these emerging technologies such as online learning to increase their own productivity as a learner and to personalize their learning process. Learning is not tethered to the traditional school or classroom in students' vision for 21st century education."[10]

Fortunately, on the resource side, a few large national funders, such as The Bill and Melinda Gates Foundation and the Charter School Growth Fund, have made "Next Generation Learning" a priority and will be making significant investments in this area in the coming years. At the state level, The Donnell-Kay Foundation hosted a blended learning summit in 2010 and plans to host a second summit with The Morgridge Family Foundation and other partners in 2011.

The national policy community is also paying attention to this topic, as evidenced with the creation of the Digital Learning Council headed by former Governors Jeb Bush and Bob Wise. At the state level, former Colorado Commissioner of Education, Dwight Jones, demonstrated Colorado's commitment to online and blended learning via the creation of the Expanded Learning Opportunities (ELO) Commission in 2010 and the Advisory Council for Online Learning in 2009. The Advisory Council for Online Learning is comprised of various stakeholders from the online community in Colorado and is charged with advising CDE and the state on policy and other changes needed to better support and expand quality online learning in Colorado.
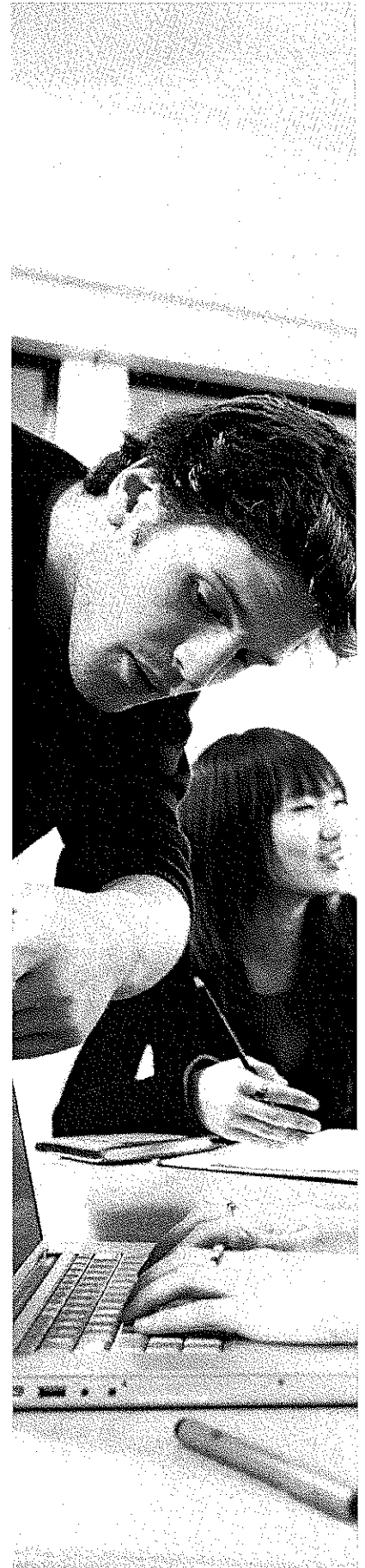
[10] www.tomorrow.org/speakup/speakup_reports.html

The ELO commission is comprised of policymakers and education leaders and seeks to: "transform the educational experience to fully engage students in their learning, their passions and their interests. ELOs foster collaboration and partnerships among teachers, schools and community partners to effectively use the school day so that it is unrestricted by walls (blended and online learning), clocks (flexible school days), calendars (expanded school week and year) or tradition."

As for support to get leaders and practitioners up to speed, interest and attendance at national conferences designed for practitioners and thought leaders in the online and blended learning communities is growing significantly each year as - evidenced by the sold out 2010 Virtual Schools Summit hosted by the International Association for K12 Online Learning (iNACOL) and the massive annual conference put on by the International Society for Technology in Education.

The following section discusses how Colorado can take advantage of some of these emergent opportunities, including how to utilize blended learning in order to increase access, ensure greater equity, and create efficiencies.

BROADBAND EXPANSION: GIVING MORE STUDENTS IN COLORADO ACCESS TO DIGITAL LEARNING

In 2010, Colorado was awarded a $100 million federal grant to expand broadband access across the state to underserved schools, libraries, colleges and communities. At the time this grant was received, Colorado ranked 42nd out of 50 states in broadband connectivity, and broadband service in our state cost 10 times that of neighboring states.[11]

In 2010, Colorado was awarded a $100 million federal grant to expand broadband access across the state to underserved schools, libraries, colleges and communities.

Because of this lack of connectivity, inequities were becoming increasingly apparent between connected schools (primarily urban and suburban) and unconnected schools (primarily rural). By providing all schools with high-speed Internet, every student in our state, regardless of geographic proximity, will soon have access to quality education options in ways that have never existed before in Colorado. However, access alone is not enough. Resources still need to be dedicated to purchasing equipment that will allow these schools to connect to the Internet. And, additional next steps will also involve aligning systems and developing the content and expertise to get the options out to students across the state, train teachers to use the new technology , and to figure out how best to do this given the state's limited resources—topics discussed in greater detail below.

USING BLENDED LEARNING TO STRETCH THE PUBLIC DOLLAR AND MAINTAIN QUALITY

The economic downturn that hit our nation in 2009 had a devastating impact on school budgets. And, with more budget cuts expected in K-12 education in 2011, it appears that this problem is not going away any time soon. As such, school and district leaders are being asked to do more with less. Rocketship Education, a charter school network in San Jose, CA offers an example of how school systems can stretch the public dollar and still receive strong academic results for kids through blended learning.

> Rocketship Education in San Jose, CA saves over $500,000 a year per school in salary costs by using blended learning in its elementary schools; savings that it can then reallocate for other purposes, such as leadership development, higher teacher salaries, facilities, and extra supports for struggling students. In a Rocketship school, students attend one block of Math/Science, one block of learning Learning Lab and two blocks of Literacy/Social Studies each day. In a typical public school, all of these classes would be staffed with a certified teacher. However, a Rocketship Learning Lab does not require certified teachers. Students work on computers in the lab for an hour and 40 min. per day using a variety of online-based skill building programs chosen by their teachers based on the unique needs of each student. The Labs are staffed, in order to provide support to students as they work online, but with less expensive personnel. This allows Rocketship to personalize learning based on student needs while also reducing staffing by five teachers and five classrooms per school, resulting in the $500,000 savings per school per year.[12]

In addition to expanded access for students and teachers, greater use of technology can lead to greater efficiencies in our school systems. With expanded access to the internet, how can the state play a role in helping districts to purchase at scale or develop shared learning management systems and platforms? Can we create incentives to share courses and content across districts and provide professional development on online teaching statewide? Or, as discussed in the section below, might it be possible to share teachers and other specialists across district lines?

[12] www.rsed.org

EXTENDING THE REACH OF GREAT TEACHERS WITH BLENDED LEARNING

School districts across the country struggle to find effective teachers. And, while districts and external partners like The New Teachers Project and Teach for America are working hard to increase the supply of quality teachers for public school classrooms, especially those in underserved communities, the demand for these teachers still far exceeds the supply. Furthermore, the public conversation about effective teachers in Colorado, given the passage of The Teacher Effectiveness Act (SB191) in 2010, stresses the need for high quality teachers in all classrooms in this state. When implemented as planned, this Act will begin to identify the places in our state where disparities in teacher effectiveness exist. Blended learning provides an opportunity to bring quality, effective teachers into schools and communities that struggle to hire and maintain a top notch teaching force. Interactive technologies like video conferencing and online courses can bring effective teachers virtually to classrooms anywhere in the world.

In their paper *3X for All (2010)*, Emily & Bryan Hassel of Public Impact talk about the power of this approach.[13] Based on reviews of teacher effectiveness research, the authors make the case that the most effective teachers produce learning gains that are three times (3X) that of the least effective teachers. As such, these highly effective teachers should be leveraged and utilized to reach more students than they can reach in a traditional classroom setting. As broadband access expands in Colorado, schools and districts in this state will increasingly have the opportunity to bring in high quality teachers virtually. This will open up new doors for students in many schools – to great teachers and courses that they would likely not have had access to otherwise.

Rural school districts are often challenged to either have the resources to hire enough teachers or struggle to recruit teachers to their rural communities. To address this, some Colorado districts have banded together to share teachers and course content via video-conferencing. Strassburg and its district counterparts on the Eastern Plains along the I-70 Corridor in Colorado provide an example of this collaboration.
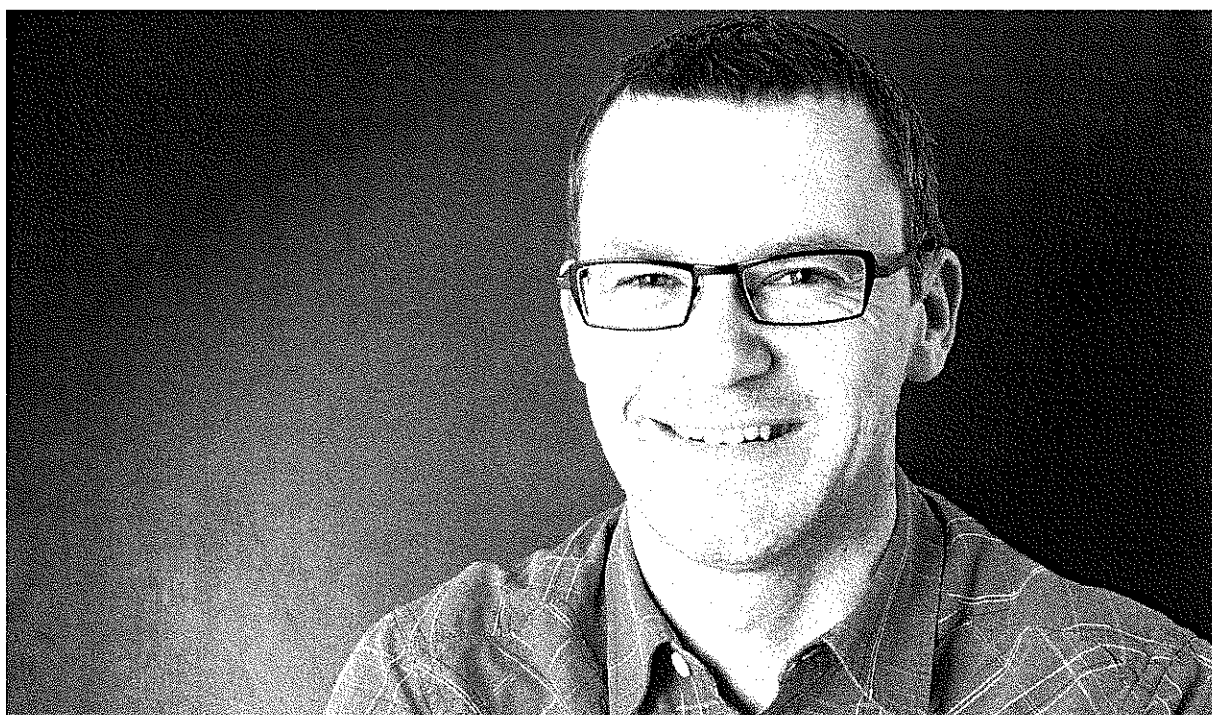
[13] *www.publicimpact.com*

Approximately 400 students from 17 school districts along the I-70 corridor on the Eastern Plains of Colorado currently benefit from the use of interactive video conferencing. These district partners work with Morgan Community College to provide a number of advanced courses for their high school students. Several classes are available that allow students to earn college level credit. Through this program, many students are able to earn an Associates Degree along with a high school diploma. Instructors come into a VNet video conferencing room at a school site in Strasburg or one of the other districts that are part of this collaboration, and are able to interact online with students in other video conferencing rooms. The most popular classes utilizing this technology include: Psychology, Algebra II, History and a variety of foreign languages. Video conferencing gives smaller school districts the opportunity to have qualified teachers in a variety of subjects they wouldn't be able to provide otherwise. Strasburg Superintended Ed Vandertook sees this technology as a great equalizer for smaller communities. VNet allows students in Strasburg to receive similar educational choices as students residing in larger school districts. The partnership with Morgan Community College helps prepare students for college, and saves families money as students earn college credit even before entering college.

In addition to providing the connectivity and opportunity for teachers to instruct virtually, there needs to be a clear focus on and plan for providing professional development to ensure that teachers are successful and comfortable teaching in this new and different way. The more comfortable teachers are using online and other blended learning strategies in their teaching, the more likely they will be to use these strategies regularly. The Jefferson County School District (Jeffco) has made professional development in online and blended instruction a priority and eNet Colorado has partnered with Intel and others to provide blended learning professional development to teachers across the state.

In addition to providing the connectivity and opportunity for teachers to instruct virtually, there needs to be a clear focus on and plan for providing professional development to ensure that teachers are successful and comfortable teaching in this new and different way.

Jeffco has created a unique system of preparing current teachers for blended and online course instruction. By the end of 2010, 408 teachers had been trained in-house to teach online courses, through a six week professional development program. Eventually, all Jeffco teachers will be trained in basic online instruction. During this professional development, teachers can elect to earn 2-3 graduate level credits for completing the online course training. The training mirrors online learning by being taught as a hybrid course, where teachers take weekly lessons online, and meet in person three times over the six week course. Teachers are taught how to navigate the blackboard online learning system and given deep instruction on developing the student-user experience. Teachers are able to view the portals and online platforms as their students would, to gain a clearer understanding of how their students will navigate their course.

After initial professional development in online learning, teachers can self-identify to become full-time online teachers. They are then mentored through a series of virtual and face to face development sessions. Teachers are given instruction and support on how to utilize programs like Response to Intervention from a virtual platform, as well as identify challenges, such as when it appears that students aren't being engaged or successful online. The professional development continues on a monthly basis, and teachers are given the opportunity to work with other instructors in their specific content areas.

With support from the Colorado Department of Education, eNet Colorado is developing blended learning resources for Colorado educators in a variety of ways. In Fall 2010, 125 educators in northeastern Colorado piloted a blended learning program on *Project-Based Approaches,* an Intel *Teach Elements* course. Nationally, this is the first time the course has been taught in a blended learning format. eNetColorado structured the course to begin with a day-long face-to-face session, followed by 5 online modules requiring 3.5 to 5 hours each, and 5 hours of outside work. In addition, participants are required to interact with colleagues in discussion forums organized into subject-area cohorts. For roughly 30 percent of the participants, this is their first time learning online. Through eNet, these teachers are able to collaborate with each other virtually, instead of meeting in person.

By June 2011, eNetColorado will pilot and launch two additional resources. The first is Colorado's iTunes University site, which will house videos, podcasts, PDFs and documents that support professional development and student learning. School districts and CDE will share documents and learning objects via their own "channels" in the state's *iTunesU* site. These materials will be accessible to all and aligned with Colorado state standards. The second is eNetColorado's Digital Exchange, using Learning.com's *Sky Digital Learning Environment* – a digital marketplace that serves as a content repository, a learning management system, and a community of educators. Through the Exchange, teachers can create and share curricular resources, assign content to students and track their performance, and identify resources to support differentiated learning.

When implementing any new ideas in education, policy and practice need to go hand-in-hand. So, while opportunities exist for blended learning, as discussed in this section, policies also need to support and allow for these new innovations to be implemented well. The next section discusses some of the policy challenges and opportunities in blended learning for Colorado.

SECTION III: POLICY OPPORTUNITIES AND QUESTIONS FOR COLORADO TO CONSIDER RELATIVE TO BLENDED LEARNING

Colorado schools and districts creating blended learning opportunities are encountering some policy challenges. Colorado is not the only state facing these challenges. Moving from a traditional, brick & mortar-based (and largely digitally un-connected model of educational delivery) to one that is student-centric, personalized and blended to include face-to-face and digital capabilities is no small shift nor can it be implemented overnight.

The Digital Learning Council's report provides some ideas for Colorado and other states to consider as they move down the path of ensuring greater access to high quality digital learning for all students. Appendix A contains the Council's full recommendations for state leaders within each of the 10 Elements of High Quality Digital Learning (Exhibit 4). This appendix also offers an analysis of how Colorado's policies and practices align with the 10 Elements and their associated recommendations and identifies potential opportunities to act on these recommendations.

Exhibit 4: The Digital Learning Council's 10 Elements of High Quality Digital Learning

1. **Student Eligibility:** All students are digital learners.
2. **Student Access:** All students have access to high quality digital content and online courses.
3. **Personalized Learning:** All students can customize their education using digital content through an approved provider.
4. **Advancement:** Students progress based on demonstrated competency.
5. **Content:** Digital content, instructional materials, and online and blended learning courses are high quality.
6. **Instruction:** Digital instruction and teachers are high quality.
7. **Providers:** All students have access to multiple high quality providers.
8. **Assessment and Accountability:** Student learning is the metric for evaluating the quality of content and instruction.
9. **Funding:** Funding creates incentives for performance, options and innovation.
10. **Delivery:** Infrastructure supports digital learning.

The policy ideas posed by the Digital Learning Council uncover opportunities and challenges associated with shifting to a blended model of schooling. This final section of the paper identifies important questions and ideas for Colorado lawmakers and leaders to consider as our state moves further down this path.

SHOULD THERE BE DIFFERENT ACCOUNTABILITY REQUIREMENTS FOR ONLINE SCHOOLS?

The Colorado Department of Education (CDE) has a duty to fulfill the responsibilities set out for it in State Statute and in State Board rules pertaining to online learning (Senate Bill 215 passed in 2007 and subsequent board rules, 1CCR301-71). It also has a duty to determine how best to align the requirements of the State's 2009 Education Accountability Act (EAA) with the requirements for online learning since the EAA was passed after SB 215. Some of this work occurred via changes made to state board rules regarding online learning in 2010; but, it appears that there may continue to be more requirements placed on online schools than on their brick and mortar counterparts. If significant differences exist, in terms of reporting and other requirements for online versus brick and mortar, the state should assess which requirements continue to be necessary and which requirements can either be eliminated or changed, given the EAA data and reporting requirements/analysis that are in place today but didn't exist when the Online Learning Act was passed in 2007.

DOES OUR CURRENT SCHOOL FINANCE SYSTEM SUPPORT BLENDED LEARNING?

In a blended model, a student may take some courses from their brick and mortar schools and others online. This is one of a few blended learning options. What are some funding models that we can look to in order to ensure that both the online school and brick and mortar school receive the resources they need in order to educate the students they are serving?

Is it possible to "break-up" the Per Pupil Revenue so that it follows the student? In other words, if a student takes two courses from an online school and the remainder in a brick and mortar school, can the equivalent share of resources (and/or the actual cost of those courses) follow the student to the online school? What are the opportunities and challenges with this type of scenario? These questions and others surface regularly in discussions about online and blended learning and need to be explored further by state and district policymakers and leaders.

HOW SHOULD WE COUNT STUDENTS WHO ATTEND BOTH ONLINE AND BRICK AND MORTAR SCHOOLS FOR STUDENT ACHIEVEMENT PURPOSES?

Who "owns" the achievement results on the CSAP for a student? If a student takes their math courses from an online school and the remainder of their courses in a brick and mortar school, who should get credit for the student's CSAP results in math? Currently, the student's brick and mortar school is held accountable for all academic results but it would be worth looking into other options that would allow for shared accountability and more accurately measure the entity(ies) responsible for student outcomes.

Who "owns" the achievement results on the CSAP for a student? If a student takes their math courses from an online school and the remainder of their courses in a brick and mortar school, who should get credit for the student's CSAP results in math?

HOW CAN WE BETTER PREPARE NEW TEACHERS AND TRAIN EXISTING TEACHERS FOR BLENDED LEARNING SETTINGS?

Some states are beginning to require teacher licensure applicants to have experience in online instruction (which then leads to teacher preparation programs integrating blended learning opportunities into their programs). Currently, no such mandate exists in Colorado; and to our knowledge, none of the leading teacher preparation programs in this state have taken on the challenge of preparing teachers going in to K-12 education to learn how to teach in online or blended settings. As such, districts, online providers and selected other vendors have created professional development opportunities to train existing teachers to teach in blended and online settings. We expect this type of professional development to expand; and hopefully in doing so, reach districts and communities that lack the expertise or resources to develop this training for their own teachers. However, we also encourage more schools of education and alternative teacher preparation programs to embrace the digital age and train teachers on the front-end, those going in to schools for the first time, on quality instruction in online and blended settings. And, we encourage the state to consider requiring online experience and/or coursework for teacher licensure.

We encourage more schools of education and alternative teacher preparation programs to embrace the digital age and train teachers on the front-end, those going in to schools for the first time, on quality instruction in online and blended settings.

HOW CAN THE STATE HELP DISTRICTS AND SCHOOLS THAT WANT TO SHIFT TO MORE PERSONALIZED SYSTEMS OF INSTRUCTION AND ASSESSMENT?

A recent visit to the Innovation Zone (iZone) in New York City unveiled some incredible and innovative ideas about how to move learning and assessment to a more granular, student-centric level.[15] A leading example in this area is the School of One. But with innovation, comes challenges. Conversations with those running blended learning schools in New York raised the ongoing challenges they face with data management systems. The type of individualized information that a School of One type model demands is often incompatible with the other types of learning and information management systems that districts and states utilize.

Additionally, a growing number of schools and districts are interested in unbundling their curriculum in order to access digital content and free themselves from traditional textbooks and other types of bundled content. However, while some digital content is free, a lot of it is not, and it can be quite costly to purchase licenses for unbundled digital content, making it cost prohibitive for some schools and smaller districts to participate in such programs.

Could the state of Colorado play a role in creating some economies of scale and opportunities for building data platforms that better align with a more personalized, student-centric-type system of learning and assessment? And could districts and schools that want to be part of a statewide licensing opportunity for high quality, unbundled digital content, band together under a statewide contract? It would be worth pulling together some state, district, and charter network leaders to explore these questions further.

The School of One is running the middle school math program in 3 NYC public schools. In these schools the math teachers work collaboratively to support students in a variety of ways: teacher-led instruction, one-on-one tutoring, independent learning, and virtual tutoring.

Each day the student and the teachers receive a daily schedule. The teachers' identifies which students they will be working with that day, the content they will be focusing on, and the type of support they will be providing students. The students' schedules focus on each individual's academic strengths and needs. As such,

> "students within the same school or even the same classroom can receive profoundly different instruction as each student's schedule is tailored to the skills they need and the ways they best learn. Teachers acquire data about student achievement each day and then adapt their live instructional lessons accordingly.By leveraging technology to play a more essential role in planning instruction, teachers have more time to focus on doing what they do best - delivering quality instruction and insuring that all students learn."[16]

[15] schools.nyc.gov/community/innovation/izone/default.htm

[16] schools.nyc.gov/community/innovation/SchoolofOne/default.htm

HOW CAN WE ENCOURAGE INNOVATION AND PROVIDE INCENTIVES FOR MORE BLENDED LEARNING IN COLORADO?

Blended learning is already occurring in our state, but its impact is limited to districts that have the resources to offer this opportunity to their students; and few incentives exist to encourage these districts to collaborate and/or expand their reach and serve students in other districts with their blended models. Expanded broadband access and modern technologies now make it possible to bring quality content and courses to underserved communities that have historically lacked such access for various reasons. Yet, our state lacks sufficient capacity and resources to move quickly and strategically at this time.

What if our state created an innovation fund, through public and private means, that could incubate and expand innovative and promising models of blended learning? The funded initiatives would demonstrate the potential and efficacy of this mode of educational delivery. On the next page are some ideas about the kinds of projects an innovation fund could support.

What if our state created an innovation fund, through public and private means, that could incubate and expand innovative and promising models of blended learning?

• Show people what blended learning looks like in action. Recruit experienced blended learning school models to Colorado with funding for replication and/or provide seed money to launch new "home grown" blended learning schools and networks.

• Offer financial incentives to districts with established online and blended learning programs to expand these programs and partner with other districts and schools to serve a greater number of students and teachers across Colorado.

• Offer start-up funds for districts that want to create zones of innovation (via the Innovation Schools Act) that provide the space and flexibility to try new things and to implement blended learning programs and strategies within and across school buildings.

• Provide seed funding to launch and/or expand partnerships with existing teacher training and development programs to prepare significantly more Colorado teachers to teach in online and blended learning environments.

• Create financial incentives to districts and schools that choose to share their best teachers with schools in underserved communities via innovative online and digital technologies that

expand the reach of these great teachers to more students and bring desperately needed talent and expertise to struggling schools.

• Create a competitive grant process to reward leading ideas that move our state towards a more personalized learning and assessment system. For example, one that is based more on student mastery than on seat-time and can utilize online capacity to accurately gauge students' strengths and deficits and provide teachers with timely information that they can use to target instruction to the needs of each individual student.

• Attract education entrepreneurs to Colorado with start-up funding to incubate new ideas in digital and blended learning.

A review of where we sit relative to the recommendations by the Digital Learning Council shows that we are already doing a number of the things that they recommend and have policies in place to back up these actions (see Appendix). Colorado has a strong network of thought partners and leaders in blended and online learning that participate in the national dialogue and come together regularly to strategize, share ideas, and work collaboratively to expand opportunities for students in our state to access high quality digital content and instruction. The digital road ahead is full of promise for students in our state and the Donnell-Kay Foundation looks forward to the ride!

APPENDIX

THE DIGITAL LEARNING COUNCIL'S 10 ELEMENTS OF DIGITAL LEARNING AND THEIR POTENTIAL FOR COLORADO[17]

The chart below lists the Digital Learning Council's 10 Elements of Digital Learning and associated recommendations for state policymakers. Also discussed is how Colorado's policies and practices currently align with each of these 10 elements (and their associated recommendations) and offers opportunities where Colorado may want to act on these recommendations.

Element 1—Student Eligibility: All students are digital learners

DLC Recommended Actions for state lawmakers & policymakers:

- State ensures access to high quality digital content and online courses to all students.
- State ensures access to high quality digital content and online courses to students in K-12 at any time in their academic career.

Colorado Alignment and Opportunities related to this DLC Element & Recommended Actions:

- Any K-12 student in CO, regardless of geographic location or grade level, can access digital content and online courses if they choose a full-time online school. If not, they may or may not have access to online courses or digital content (and the state plays no role now in ensuring students can or will have such access). Selected students have access to part-time or supplemental online courses if their district or school offers these courses; or, if a child's parent/guardian chooses to pay for a course through a private provider.
- As Internet connectivity expands statewide via the broadband grant, the state can be gathering and sharing information about existing online and digital offerings that districts can be taking advantage of now. The state can also convene district & BOCES leaders, private providers, and key thought partners to develop strategies to recruit quality online and digital content providers to our state and to incent districts and BOCES to collaborate and expand access to current and future online and digital content and instructors to students statewide.
- The state does not play a role in determining the quality of individual courses. It does, however, hold full-time online schools accountable for student performance with the School Performance Framework, as it does all public schools in the state. Even with access to full-time online schools, student performance in these schools in Colorado needs to improve in order to make the argument that all students in our state have access to high quality online courses and digital content. School districts and charter authorizers should close online schools that are failing students, support the expansion of those proving effective, and pro-actively recruit promising new models.
- Since some of the online schools in Colorado are serving a very at-risk population of students (e.g., students at risk of or who have dropped-out of school), the state needs to move more quickly to implement the new accountability measures currently in development for schools designated as Alternative Education Campuses (AECs). Once in place, districts and authorizers need to hold AECs to the new accountability requirements in order ensure quality while also honoring and recognizing the unique population of students being served by these schools.

Element 2—Student Access: All students have access to high quality digital content and online courses

DLC Recommended Actions for state lawmakers & policymakers:

- State does not restrict access to high quality digital content and online courses with policies such as class size ratios and caps on enrollment or budget.
- State does not restrict access to high quality digital content and online courses based on geography, such as school district, country, or state.
- State requires students to take high quality online college-or-career-prep courses to earn a high school diploma.

Colorado Alignment and Opportunities related to this DLC Element & Recommended Actions:

- Colorado policies for online schools are limited to full-time online schools and do not create restrictions, such as those outlined below. However, if a full-time online school is serving students state-wide and wants to create a blended model with learning centers located in multiple communities across various districts, it must sign an MOU with each district where the learning centers will be geographically located.
- While the state does not restrict access, it also does not take a very pro-active role in encouraging or broadening access to blended and digital learning. The state could serve as a resource in this area and provide guidance and support to districts interested in expanding their digital offerings and online access.
- The state does not require students to take online courses in order to earn a high school diploma. All graduation requirements in CO are created at the local level by district boards of education. Local school districts, however, could lead the way on this and choose to make it a requirement for students to take a high quality online course in order to earn their high school diploma.

Element 3—Personalized Learning: All students can customize their education using digital content through approved providers

DLC Recommended Actions for state lawmakers & policymakers:

- State allows students to take online classes full-time, part-time, or by individual course.
- State allows students to enroll with multiple providers and blend online courses with onsite learning.
- State allows rolling enrollment year round.
- State does not limit the number of credits earned online.
- State does not limit provider options for delivering instruction.

Colorado Alignment and Opportunities related to this DLC Element & Recommended Actions:

- Colorado students can take online classes full-time, part-time, or by individual course but most students in the state lack access to publically funded online or digital content unless they attend a full-time online school. And, most supplemental online and blended offerings that are offered part-time or by course, such as those offered in Jeffco or by Colorado Online Learning, are geared towards high school students. It is at the districts' discretion whether to give students credit for supplemental online courses.
- While students in Colorado may be allowed to do these things in theory (in other words laws don't restrict them from doing so per se), when it comes to acting on them it proves to be challenging. For instance, if a student wants to enroll with multiple providers and blend courses using public per pupil funding, how does the funding flow and who is held accountable for student performance?

Element 4—Advancement: Students progress based on demonstrated competency

DLC Recommended Actions for state lawmakers & policymakers:

- State requires matriculation based on demonstrated competency.
- State does not have a seat-time requirement for matriculation.
- State provides assessments when students are ready to complete the course or unit.

Colorado Alignment and Opportunities related to this DLC Element & Recommended Actions:

- All districts and public schools are required to give the annual CSAP exams in grades 3-10 each Spring. These tests are used to assess mastery of specific standards for a given grade. Students may not take a CSAP exam for a different grade than their own nor are the tests tied to specific courses or units.
- As a local control state, Colorado school districts can create competency-based systems that allow students to matriculate based on mastery, not seat-time, and can develop their own assessments that students can take when ready to complete the course or unit. Adams 50 in Westminster, CO is an example of a district that is moving in this direction.

Element 5—Content: Digital content, instructional materials, & online/blended learning courses are high quality

DLC Recommended Actions for state lawmakers & policymakers:

- State requires digital content and online and blended courses to be aligned with state standards or common core standards where applicable.

Colorado Alignment and Opportunities related to this DLC Element & Recommended Actions:

- All courses and content that charter schools and districts use must be aligned with state standards. Digital content and blended courses should be no exception. A precedent exists already in our state for this so it is unlikely that this will be a challenge to continue as the presence of online and digital content expands in our state.
- To date, online schools in Colorado have been generally lower performing. As such, this raises questions about the quality of these schools. It is critical for the state to hold online schools accountable to the same standards as all public schools. Colorado will need to have higher performing examples to point to in the blended learning space than it has been able to provide thus far in the full-time online space.

Element 6—Instruction: Digital instruction and teachers are high quality

DLC Recommended Actions for state lawmakers & policymakers:

- State provides alternative certification routes, including online instruction and performance-based certification.
- State provides certification reciprocity for online instructors certified by another state.
- State creates the opportunity for multi-location instruction.
- State encourages post-secondary institutions with teacher preparation programs to offer targeted digital instruction training.
- State ensures that teachers have professional development or training to better utilize technology before teaching an online or blended learning course.

Colorado Alignment and Opportunities related to this DLC Element & Recommended Actions:

- Colorado does not have any type of specification in its teacher licensing or the accreditation of teacher preparation programs about online or blended learning. Teacher preparation programs would need to build capacity to include such instruction in their programs. A move by the state to mandate some type of online experience in order to obtain a teacher license would likely lead to the inclusion of these experiences as part of teacher preparation. This would lead to teachers coming out of Colorado's education schools equipped to instruct in online settings and/or integrate blended learning into brick and mortar classroom experiences.

- Given the presence of multi-district online schools already in this state, opportunity exists for multi-location instruction.
- Districts and private providers are leading the way in professional development for existing teachers in online and blended learning. The state could play a role in sharing information about these opportunities and encourage new providers to enter this space and/or to expand access to existing opportunities for communities that do not provide this type of professional development currently.
- Students can already take online courses for credit from online instructors located in other states (e.g., Advanced Placement courses). It is unclear if it is necessary to expand certification to allow more out-of-state instructors to teach in Colorado or if existing policies already allow for this to occur (e.g., can this occur in subjects or for courses beyond AP?).

Element 7—Providers: All students have access to multiple high quality providers

DLC Recommended Actions for state lawmakers & policymakers:

- State has an open, transparent, expeditious approval process for digital learning providers.
- State provides students with access to multiple approved providers including public, private, and non-profit.
- State treats all approved education providers – public, chartered, not-for-profit, and for-profit equally.
- State provides all students with access to all approved providers.
- State has no administrative requirements that would unnecessarily limit participation of high quality providers.

Colorado Alignment and Opportunities related to this DLC Element & Recommended Actions:

- As a local control state, decisions about educational providers are mostly made at the district or school level, not the state level. As such, the CDE is usually not involved in selecting and approving digital learning providers. That said, these same recommended actions for the state could apply directly to school districts.
- One area where the state has been involved recently in approving providers, some of which are digital learning providers, has been for turnaround schools. As the number of identified schools for turnarounds grows, so will the need for more quality providers grow who can work with schools in various parts of the state. The state has an opportunity to examine its processes for selecting turnaround providers now and into the future, in light of the DLC's recommendations.

Element 8—Assessment and Accountability: Student learning is the metric for evaluating the quality of content and instruction

DLC Recommended Actions for state lawmakers & policymakers:

- State administers assessments digitally.
- State ensures a digital formative assessment system.
- State evaluates the quality of content and courses predominately based on student learning data.
- State evaluates the effectiveness of teachers based, in part, on student learning data.
- State holds schools and providers accountable to achievement and growth.

Colorado Alignment and Opportunities related to this DLC Element & Recommended Actions:

- The state is in the process of creating new state summative assessments that are aligned with Colorado's new state standards that will be implemented in the 2011-12 school year. The intent is to make these new tests "on-line to the extent it fits instructional best practice and is fiscally possible or feasible." (Dec 6, 2010 presentation to State Board).

- The state will not develop formative assessments but plans to offer support and guidance to local districts to develop these assessments. There was no reference in the Dec 6, 2010 board presentation as to whether or not the support provided will be to help districts access and/or develop formative assessments that are digital. This is an area where the state could be very helpful (e.g., identifying quality and innovative providers, sharing information about how districts within and outside our state are using digital assessments to personalize and inform student learning, etc).
- With the passage of SB191, The Teacher Effectiveness Act, in 2010, Colorado will soon have a teacher evaluation system in the state that is tied to student performance. And all schools in the state are held accountable for student achievement and growth through the Colorado School Performance Framework.

Element 9 — Funding: Funding creates incentives for performance, options, and innovation

DLC Recommended Actions for state lawmakers & policymakers:

- State funding model pays providers in installments that incentivize completion and achievement.
- State allows for digital content to be acquired through instructional material budgets and does not discourage digital content with print adoption practices.
- State funding allows customization of education including choice of providers.

Colorado Alignment and Opportunities related to this DLC Element & Recommended Actions:

- Decisions about instructional material budgets in CO are made at the local levels by school districts and schools, not at the state level. So, school district and charter school board are the ones who have the opportunity to make the switch to digital content as a viable option in lieu of traditional print materials. CDE could choose to play a leadership role in this effort by sharing information about how districts statewide are using digital content and facilitate discussions across districts regarding best and most useful practices in the use of digital content.

Element 10 — Delivery: Infrastructure supports digital learning

DLC Recommended Actions for state lawmakers & policymakers:

- State is replacing textbooks with digital content, including interactive and adaptive multi-media.
- State ensures high-speed broadband Internet access for public school teachers and students.
- State ensures all public school students and teachers have Internet access devices.
- State uses purchasing power to negotiate lower cost licenses and contracts for digital content and online courses.
- State ensures local and state data systems and related applications are updated and robust to inform longitudinal management decisions, accountability and instruction.

Colorado Alignment and Opportunities related to this DLC Element & Recommended Actions:

- $100million broadband grant should bring internet connectivity out to the most needed communities so CO is well positioned to implement this recommendation.
- As a local control state, decisions about textbooks are made by school districts and/or charter schools locally. That said, the state could play a role to utilize purchasing power at the state level and allow districts and schools to opt-in to this effort and access lower cost licenses and content than they are likely to receive by negotiating for these items on a district-by-district basis.
- CDE is well ahead of other states with the implementation of Schoolview and the Colorado School Performance Framework in terms of ensuring that our state has data systems and related applications to inform accountability. The work underway as a result of the Teacher Effectiveness Act passed in 2010 will lead to data systems to inform management decisions. The area where districts and schools could use more support is with data systems to inform instruction—timely and efficient data driven interim assessment measures to gauge student knowledge and progress in understanding and mastering key concepts throughout the school year.

BLENDED LEARNING

By: Amy Berk Anderson and Amanda Skrzypchak | Donnell-Kay Foundation
For an electronic copy of this report, visit www.dkfoundation.org

DK DONNELL-KAY FOUNDATION