Colorado Blended Learning Roadmap

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COLORADO
EMPOWERED LEARNING

Roadmap produced by

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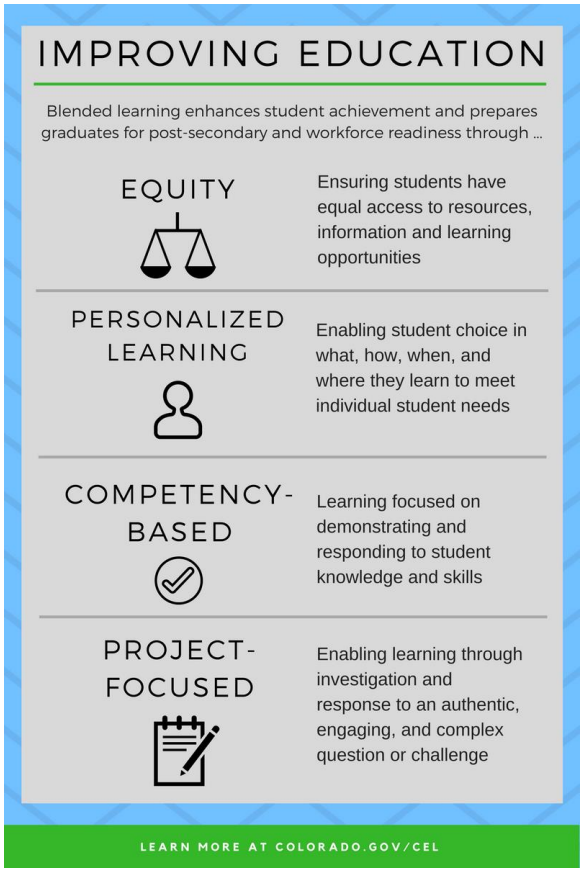
Executive Summary

Blended learning holds tremendous potential for enhancing student achievement and preparing graduates for postsecondary and workforce readiness by advancing equity and personalized learning. Blended learning is a teacher-led instructional method or strategy that combines classroom and digital learning, and through which students have some control over when, where, and at what pace they learn.[1]



While some schools and districts across Colorado are already utilizing blended learning, there is a rising demand and interest in innovative instructional strategies across the state. The promise and potential of blended learning prompted the Colorado General Assembly to commission a **statewide blended learning roadmap** through House Bill 16-1222.

The roadmap details successes, challenges, and opportunities for implementation of blended learning across Colorado. The roadmap highlights priority goals, objectives, and strategies related to human capital, policy and funding, and technology and digital resources.

The development of the roadmap was led by Colorado Empowered Learning (CEL) — a division of Colorado River BOCES and a state-funded initiative that aims to harness the talents and knowledge of educators across the state to enhance equity and access in K-12 education through blended learning — along with a core team of blended learning experts. Roadmap development included statewide outreach to teachers, school and district leaders, and families.

The table on the following page outlines the priorities and goals of the roadmap for Colorado schools and districts to support the implementation of blended learning through human capital, policy and funding, and technology and digital resources. The intent of the roadmap is to provide a pathway to support schools and districts that wish to implement blended learning strategies. The roadmap recognizes and respects the autonomy of local districts to provide the education that best meets the needs of their students.

Achieving success will require collaboration among many partners statewide. CEL will help foster this collaboration and track progress. Approaches to tracking progress are based on existing funding, feasibility, and privacy requirements for performance monitoring.

[1] www.christenseninstitute.org/blended-learning-definitions-and-models/

COLORADO BLENDED LEARNING ROADMAP

PURPOSE: Provide a pathway to support schools and districts that wish to implement blended learning strategies by identifying statewide priorities, goals, objectives, and strategies.

VISION: Enhance student achievement and prepare graduates for post-secondary and workforce readiness through blended learning strategies that offer equitable, personalized, competency-based, and project-based learning.

HUMAN CAPITAL

Blended learning and its benefits are widely understood and championed by key constituencies.

- Create support for blended learning among all stakeholders.

Educator leaders and teachers are prepared to effectively implement blended learning strategies in their classrooms.

- Increase the capacity of educator leaders and teachers to utilize blended learning instructional methods and strategies.
- Support the creation of local plans for systemic sustainability of blended learning.

POLICY and FUNDING

State, district and school policies allow flexibility to support innovative instructional models.

- Assist schools and districts to work within the current funding and policy models to promote greater innovation to expand opportunities for students.
- Increase access to blended learning opportunities across the state through improved funding models that catalyze innovation and through state and local policies that consider innovative instructional models.

TECHNOLOGY and DIGITAL RESOURCES

All students and teachers have access to quality technology and tools to enable blended learning.

- Connect stakeholders with resources that support efforts to ensure equitable, affordable, and accessible technology and tools for blended learning.
- Promote equitable and affordable pricing of connectivity, hardware, software, and digital resources for all districts.
- Establish, enhance, and advance statewide open educational resource (OER) platforms to enable ease of access, usability, and affordability of digital content.
- Promote development of high quality content through new partnerships.

For additional information or to learn more about blended learning, visit www.colorado.gov/cel

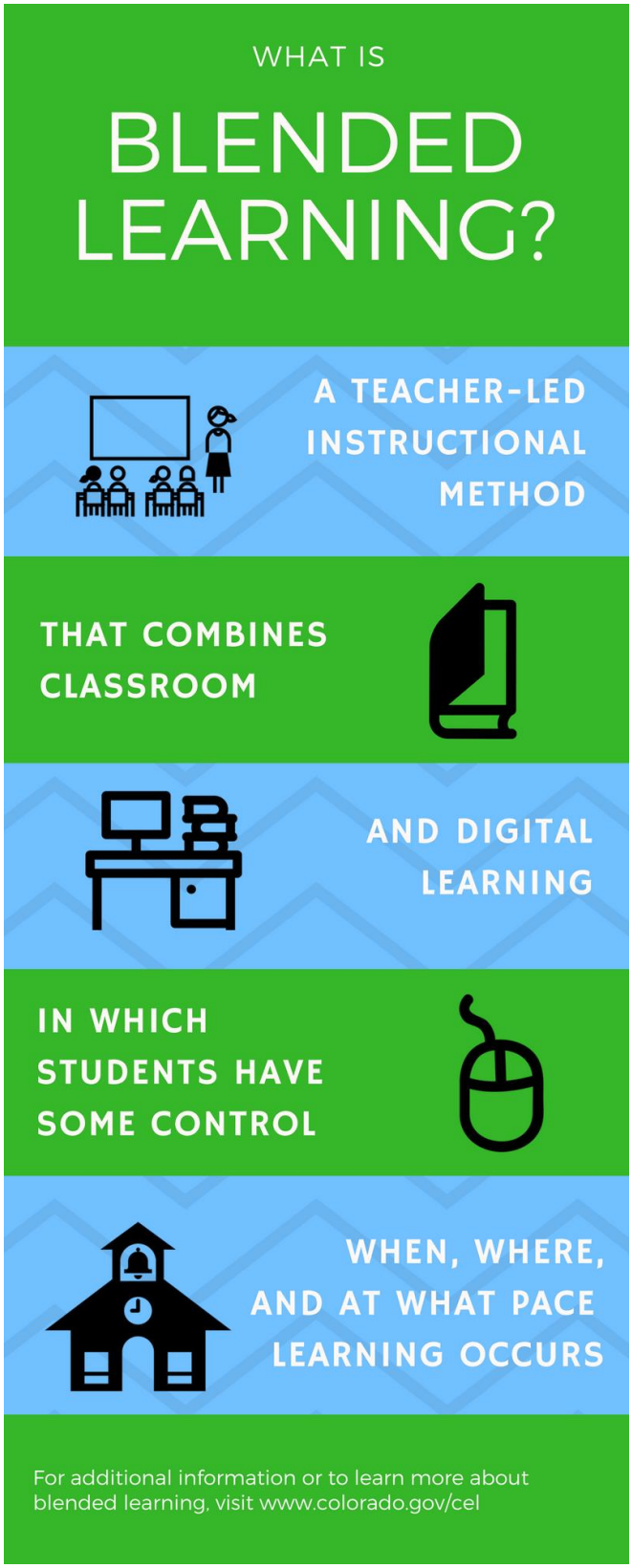
Destination: Student Success

Imagine a Colorado where students can access personalized coursework and top-notch instruction on a variety of topics — from math to science and English literature to foreign languages — regardless of where they live. Imagine a future where students spend classroom time actively engaging with teachers and focused on demonstrating competency and applying concepts rather than filling a seat. Imagine a learning model that best prepares graduates who are ready for college or the workforce. Imagine a truly equitable education system in which students across the state have equal access to content and materials and where teachers are given the support they need to meet students' varied needs and proficiencies through a combination of innovative classroom instruction and digital resources.

Blended learning — a teacher-led instructional method that combines classroom and digital learning, and through which students have some control over when, where, and at what pace they learn — offers a strategy to help realize this vision. While blended learning is not the only means to achieve these outcomes, it is an important tool for tailoring instruction to the needs of all students.

Walk into a blended classroom and you will see students engaging in learning in a variety of ways: receiving direct instruction from a teacher in small groups or as a full class, working in groups collaboratively on a project, rotating between teacher-led instruction and individual work on computers, or working independently on supplemental blended courses. Blended learning can take many forms and is customized to meet student needs.[2] **While blended learning utilizes digital and online strategies, it combines them with face-to-face, classroom-based education and thus should not be confused with solely online learning.**

From the Western Slope to the Eastern Plains and along the Front Range, teachers, schools, and



[2] http://www.blendedlearning.org/models/

districts are beginning to implement blended learning in the classroom. Blended learning is helping schools across the state offer new opportunities and choices to students, equipping educators with innovative new teaching strategies, and addressing budget constraints and teacher shortages. It also ensures students — regardless of where they live, which school they attend, or what needs they have — can access quality and engaging education on a wide variety of topics.

Case Studies

Many schools and districts are already demonstrating how blended learning can complement and enhance efforts underway to improve student achievement, provide vital resources and tools to teachers, and promote a more equitable, accessible approach to education statewide. Their success stories and the promise blended learning holds moved educators, policymakers, and citizens to support the creation of this roadmap, which charts a course for supporting blended learning across the state.

> "Our students are able to access content that speaks directly to them and their aspirations."
>
> — **Alan Dillon**, Superintendent
> De Beque School District 49-JT

Burlington School District RE-6J
Blended learning offers schools an ability to meet the personalized pacing needs of students, including those working at an advanced or accelerated level. The Burlington School District has utilized blended supplemental courses to assist students seeking to graduate early. For example, the district worked with Colorado Digital Learning Solutions to help a Burlington High School junior access an increased number of advanced courses, ultimately allowing the student to graduate early by earning additional credits with flexible scheduling.

De Beque School District 49-JT
De Beque has pioneered the use of blended learning to ensure students have access to a wide array of coursework despite its small size. De Beque has enrolled an entire eighth grade class in U.S. History. The local teacher works in conjunction with the supplemental instructor. The local teacher manages the course pacing and schedule and provides direct classroom support while the online instructor provides support as needed to students. This provides a blended experience for the students with support both virtually and in the classroom, while building on existing, strong content that the teacher can modify when necessary.

Denver Public Schools – Grant Beacon Middle School
The Beacon Network has been using blended learning strategies to turn around struggling schools, including Grant Beacon Middle School. Grant Beacon focuses on blended and personalized learning, right down to furniture and classroom design. Students receive

> "Blended Learning has transformed my vision of what is possible within a classroom. It has allowed me to initiate and practice the values that I feel are very important in how students learn. Those values include: student choice in terms of type of learning, length/pace of learning, individual versus group/partner work and other types of differentiation dependent on interest, challenge, and needs."
>
> — **Kerri Courtney**, Teacher
> Longmont High School
> St. Vrain Valley School District

targeted, direct instruction from a teacher; small groups of students receive instruction from a teacher; groups of students work collaboratively; students work individually at computers to complete research-based online programs or varying levels of teacher-created online activities; and the schools utilize project-based activities.[3] This model is being replicated into a network of blended learning schools. This YouTube video, published by Denver Public Schools, demonstrates how blended learning being implemented at Grant Beacon.

Ellicott School District 22

The Ellicott School District utilizes blended learning strategies to support its special education programs. Teachers in the district use supplemental blended courses in middle school math and language arts to support a blended delivery of content to students in their classrooms. Ellicott instructors work with Colorado Digital Learning Solutions online instructors to customize the scope, sequence, and pacing of material to meet students' individual needs. Supplemental instructors provide support as required while following the lead of on-site instructors in classrooms to ensure that students are engaged and making progress based on their needs and abilities.

JeffCo Public Schools

Blended learning has helped JeffCo Public Schools expand student access district-wide through a wide variety of supplemental blended courses. This has helped middle school and high school students take courses not available at their neighborhood schools, including classes that meet the needs for students with special or accelerated needs.

> "Without this program, our students would have limited access to a variety of courses and would not be able to be competitive with students on the Front Range."
>
> — **Dianna Chrisman**, Superintendent
> Yuma School District – 1

For example, supplemental blended courses enabled a student at Drake Middle School to take high-school-level Spanish class despite limited classroom space. The student took the advanced Spanish course through a teacher-led, blended format. This arrangement, which is commonly offered throughout the district, allows students the flexibility to manage time, place, and pace, accommodating their learning needs, learning preferences, and athletic extracurricular schedules.

St. Vrain Valley School District

St. Vrain is preparing its teachers to implement blended learning through the creation of professional development courses including the Blended Badges Cohort, Blended Collaborative and the Blended Masters program. The trainings themselves are blended — offering a digital training component combined with face-to-face training led by district leadership, during which participants share lessons, strategies, ideas, insights, and challenges. This approach has supported nearly 100 educators in their efforts to bring blended learning to the classroom.

Yuma School District – 1

As a small district, Yuma has historically been limited in its ability to meet student demands for a wide range of courses. Blended learning, specifically supplemental blended courses, has enabled the district to meet student needs and expand available coursework for students — including classes like American Government, Life Science, and Professional Photography.

[3] https://beaconnetworkschools.org/gbms/cornerstones/blended-learning/

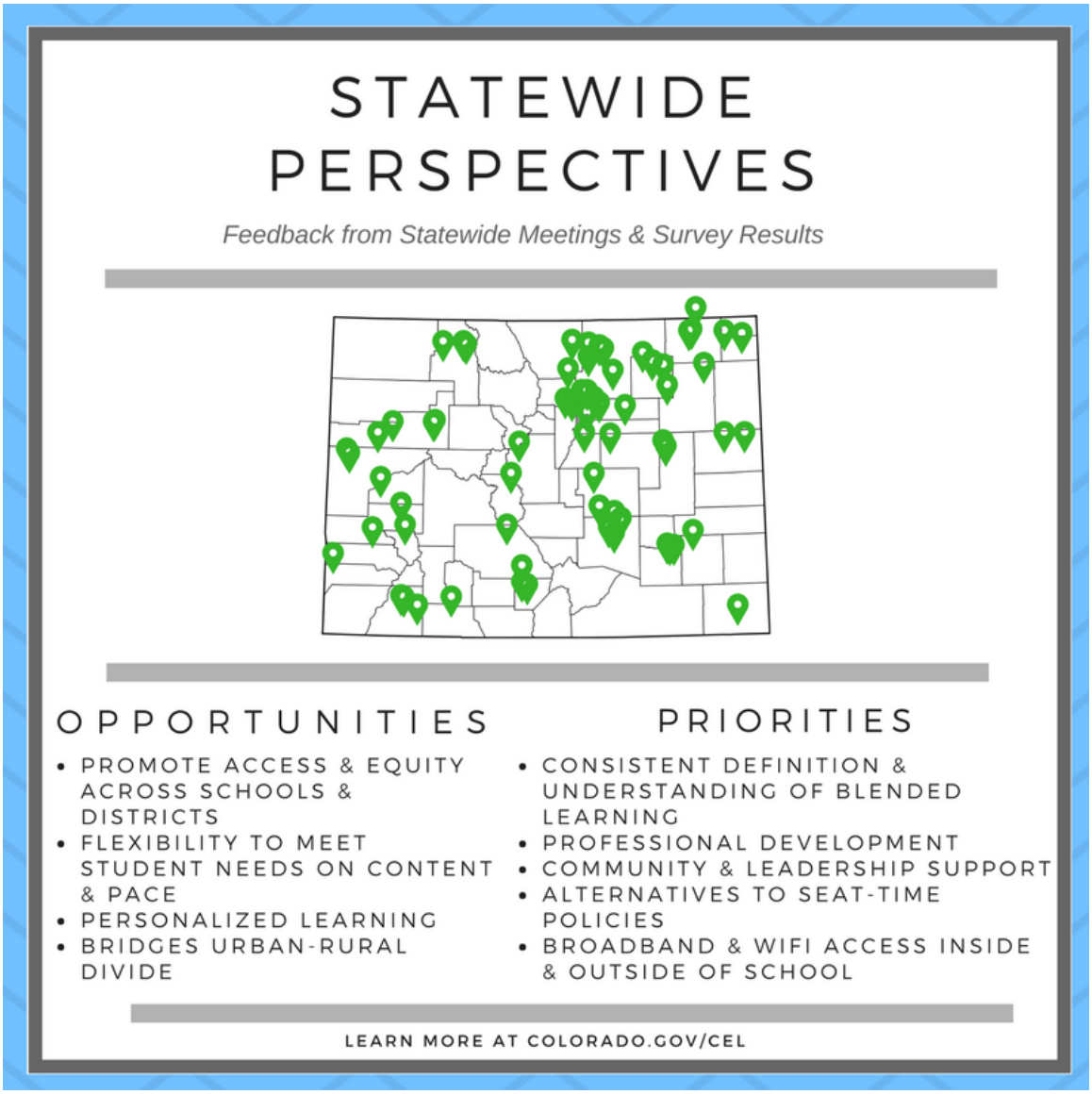
Creating the Roadmap

As seen in case studies across the state, blended learning holds tremendous potential for helping students and teachers alike. Blended learning helps to promote and support equitable access and personalized learning, enhance student achievement, and prepare graduates for success in postsecondary education and workforce readiness.[4] This roadmap meets the charge of House Bill 16-1222 by identifying critical priorities, goals, objectives, and strategies to help support statewide integration of supplemental online and blended learning. The roadmap sets out key steps toward supporting school districts, charter schools, and BOCES to the extent that each determines whether and how to implement blended learning in their educational approaches.

Colorado Empowered Learning (CEL)[5] led the development of the roadmap in partnership with a core team of blended and supplemental learning experts from across the state. CEL is a state initiative established in response to House Bill 16-1222. It is actively working to harness the talents and knowledge of educators across the state — and expertise and learnings across the nation — to enhance equity and access in K-12 education through blended learning. CEL partners with educators and organizations throughout the state to catalyze innovation in education through services provided by nonprofit organizations: iLearn Collaborative and Colorado Digital Learning Solutions. Through these partners, CEL provides supplemental blended courses, professional development for educators, and consulting for schools and districts.

To ensure the roadmap reflects the opinions of a diverse array of communities, CEL partnered with Keystone Policy Center[6] to hold outreach meetings in 13 communities across Colorado along with two virtual meetings, and an online survey.[7]

[4] For more information on the potential of blended learning, see the resources section of this roadmap.
[5] www.colorado.gov/cel
[6] www.keystone.org/
[7] See Appendices B, C, and D for more information on outreach and engagement.



The outreach meetings and online survey gathered the perspectives of Colorado educators, school and district leaders, families, and community members with regards to their vision for education in Colorado as well as key barriers and priorities for blended learning (Appendix C). Interviews and research with ten states also revealed lessons learned from their blended learning programs (See Appendix D). Feedback gathered through these outreach efforts provided the foundation for the development of roadmap priorities, goals, objectives, and strategies. Key themes from the outreach are summarized in the graphic above and are further detailed in Appendices B, C, and D.

Stakeholders across the state emphasized the potential for blended learning to enhance equity and support personalized learning. Stakeholders also emphasized the importance of a consistent definition and understanding of blended learning, professional development for educators, community and leadership support, improved funding policies, access to broadband and Wi-Fi inside and outside the school, access to quality course content, and adequate hardware and software to support blended learning.

Priority Pathways

The roadmap describes goals, objectives, and strategies for three key priority areas representing critical pathways towards successful statewide implementation of blended learning. These are:

Human capital – ensuring the skills, support, and sustainability needed among teachers, school leaders, and community members

Policy and funding – ensuring adequate funding and supportive state and local policies

Technology and digital resources – ensuring equitable access to quality technology and tools

Stakeholders across Colorado emphasized the importance of addressing human capital issues — especially educator training and professional development followed by leadership support — as the top priority for the roadmap; this was reflected in outreach meetings and survey results from across the state (See Appendix D). Human capital was followed by priorities related to seat time policies. Participants ranked issues related to technology and digital resources further down on the list of priorities for the roadmap. However, addressing each of these priorities is ultimately integral to blended learning success and will involve different strategies, partners, and resources. Each pathway can and therefore should be pursued in parallel while placing greater emphasis on the higher-ranking priorities. Each priority area is further detailed below, followed by mechanisms for tracking progress of the roadmap at large.

Human Capital

The issue: Successful implementation of blended learning requires: (1) educators with skills to deliver instruction complemented by digital tools and students ready to learn through blended instruction and (2) support and leadership from a wide range of stakeholders.

The current situation and need: The term blended learning is interpreted in many different ways; different programs have different definitions and understandings. This ambiguity leads to confusion and misinterpretation of what blended learning is and what it is not. Blended learning can be confused with online-only education, even though they are different methodologies of instruction, with one depending entirely on utilization of online instruction and the other (blended learning) utilizing a variety of instructional delivery models including face-to-face instruction in classrooms and digital learning. Effective communication and widespread, common understanding of blended learning is an integral component to creating the needed ownership from school administrators, teachers, students, and the community.

Additionally, with an increasing number of classrooms using blended learning models there is an increased need for effective educator training and professional development. Many educators have never been exposed to blended learning, including effective deployment of digital tools in the classroom, and require additional professional development to effectively transition from traditional teaching models to blended models. Teaching in a blended learning format calls for a shift in mindset as well as additional skills and competencies beyond traditional classroom models. These new competencies may include technical skills, data practices, coaching techniques, change management, and learning path customization among others.

Roadmap priorities: Throughout the state, participants in the blended learning roadmap outreach process ranked human capital as the highest priority for statewide action. The roadmap thus prioritizes building widespread support from stakeholders, providing teachers and educators with training and professional development, and helping to support local plans for the sustainability of blended learning models.

HUMAN CAPITAL

The Issue: *Successful implementation of blended learning requires (1) educators with skills to deliver instruction complemented by digital tools and students ready to learn through blended instruction and (2) support and leadership from a wide range of stakeholders.*

GOAL 1

BLENDED LEARNING AND ITS BENEFITS ARE WIDELY UNDERSTOOD AND CHAMPIONED BY KEY CONSTITUENCIES.

CREATE SUPPORT FOR BLENDED LEARNING AMONG ALL STAKEHOLDERS.

Provide dialogue, tools and resources to effectively communicate about and create support for blended learning across the state, e.g.:

- Create a multi-media representation of blended learning to share with parents, teachers, community, policymakers, etc. Use this to provide clarification and create understanding about blended learning.
- Create flexible communication plan templates that can be tailored to different audiences — superintendents, community, school board, teachers, etc.
- Hold community forums/listening sessions/symposia with parents to talk about effective blended learning models and strategies.
- Present about blended learning at already scheduled meetings of school districts. Set up a system for effective networking and learning among these champions.
- Identify, nominate and recognize/acknowledge "lab sites" around the state to showcase effective blended learning strategies and provide tours of these sites.
- Create a virtual networking community of sharing between district and school leaders with subgroups in each specialty area.

GOAL 2

EDUCATOR LEADERS AND TEACHERS ARE PREPARED TO EFFECTIVELY IMPLEMENT BLENDED LEARNING STRATEGIES IN THEIR CLASSROOMS.

INCREASE THE CAPACITY OF EDUCATOR LEADERS AND TEACHERS TO DELIVER BLENDED LEARNING INSTRUCTIONAL METHODS AND STRATEGIES.

Provide professional development for educator leaders and teachers in blended learning strategies:

- Identify exemplars and leaders in Colorado. Pair and share local experts with district and school leaders.
- Foster coaching, mentoring, and support for teachers using schools that have implemented successful blended learning programs as proof points.
- Build a cohort of blended learning teachers and champions to share lessons learned.
- Arrange district and school visits for exposure to successful programs.

Advocate for blended teaching models in teacher prep programs:

- Work with higher education on a strategic plan for what incorporating blended learning in teacher prep programs would look like.
- Look at teacher programs already connected to K-12 districts and how to incorporate blended learning models in their courses.

SUPPORT THE CREATION OF LOCAL PLANS FOR SYSTEMIC SUSTAINABILITY OF BLENDED LEARNING.

- Provide consulting and templates for planning.
- Create cohorts of local expertise and affordable resources.
- Offer leadership/professional development training programs.
- Identify and showcase classroom, school, and district best practices to leaders.

Policy and Funding

The issue: Although schools are finding pathways to work within existing polices to enable flexibility for innovative instruction, a legislative review of Colorado's education financing system would be beneficial. Schools and districts would benefit from funding policies with enhanced systemic flexibility that adequately and efficiently allow for more innovation at scale. Blended learning can be responsive to and support other policies at the state, district, and school; schools and districts may benefit from assistance in understanding how to align blended learning with existing state and local policies.

The current situation and need:

Funding models: Colorado's current educational funding model is based solely upon an annual October count, i.e., schools and districts count pupils in attendance as of the school day nearest to October 1.[8] The current count system does not fully accommodate real trends of student mobility, creates disincentives to appropriately serve disengaged and other academically at-risk students, and can result in systemic inequities in the types, diversity, and quantity of courses that different sized schools and systems can offer their students due to differences in available funding. Unlike in many other states, funding per student in Colorado cannot be split into course-level increments to allow students to take advantage of different education opportunities; this approach also limits flexibility to adapt to the needs of students and the evolving education system. Colorado also audits district funding by requiring documentation of seat time, which can further limit personalization and competency-based learning, whereby a student may demonstrate mastery of a topic and readiness for other learning in a lesser amount of time and/or through modes other than seat-based learning.

To the best of its ability within current statute, the Colorado Department of Education (CDE) currently works cooperatively with districts and schools to provide flexibility to accommodate student, school and district needs. However, further alignment of state funding policy with current educational practices is needed. Increases in flexibility, changes to seat time models, and changes in the increments by which students are counted under the current system could all more effectively enable implementation of blended learning and innovative instructional models at scale across the state. Strengthened accounting procedures would also better support blended learning by providing more clarity on how funding models can be applied for these models as well as a more precise understanding of levels of participation in blended learning and alternative educational models.

Other policies*:* In addition to the state policies associated with seat time and the October count day, there are a wide range of policies at the state, district, and school level that must be considered when implementing blended learning models and other innovative instructional models. Each school and district has different policies designed to meet local needs. Examples of state and local policies relevant to blended learning include:[9]

- State policies:
    - **Student data privacy policies** ensure the protection of student data and information that may be contained in digital content. Districts can address privacy requirements

[8] https://www.cde.state.co.us/cdefinance/fy2015-16brochure

[9] While national policies also can drive issues around personalization, quality, and equity at the student level, these are not a focus of the Colorado Blended Learning Roadmap.

through their contract language with vendors of technology, learning management systems, and digital content that support blended learning environments.
    - **Accountability policies** at the state level guide how student success is assessed; blended learning models would benefit from policies that support competency-based learning while enabling flexibility in how competency is achieved and demonstrated.
- District and school policies:
    - **Graduation policies** set requirements for student graduation. Blended learning can support these policies in various districts.
    - **Staffing policies** guide the hiring and funding of teachers. Blended learning strategies may help to inform staffing policies by identifying policies and practices to address teacher shortages, identifying needed positions or skills related to blended learning instruction, and leveraging expertise to provide additional content and courses.
    - **1:1 and "bring your own device"** policies at the district and/or school level may drastically improve student access to hardware (laptops, tablets, etc.) to support blended learning.

Navigating existing state and local policies to ensure innovative instructional models meet requirements can require in-depth knowledge and experience with these policies. The good news is that these policies can often be successfully navigated to include blended learning and other models. Perceived barriers to implementation can often result from perceptions of the flexibility (or lack thereof) of existing policies rather than the policies themselves. In most cases, blended learning models and strategies can be supported within existing school and district goals, strategic plans, and other policies. CEL helps districts and schools align blended learning in support of these various policies.

Statewide, there is an opportunity to assist schools and districts in becoming more aware of how policies can be successfully applied and adapted with the goals of meeting and supporting existing policies as well as the implementation of additional innovative instructional models. While policy change may be helpful in some cases — and it is important that state and local policies consider innovative instructional models — it is often the case that schools and districts can start implementing blended learning without having to make significant policy changes.

Roadmap priorities: Stakeholders throughout the state consistently cited funding and seat time as barriers effectively for implementing blended learning models. The roadmap prioritizes supporting local schools and districts in understanding and aligning blended learning models with current funding policies as a first step. The roadmap also emphasizes the importance of exploring new funding models and contributing to future state and local policy discussions, to better support innovative instructional models in the future.

POLICY AND FUNDING

The Issue: *Colorado's education financing system lacks flexibility to adequately assist schools and districts with innovation to propel blended learning and achieve equitable course access for all students. Other policies at the state, district, and school level can intersect directly or indirectly with blended learning models.*

GOAL

STATE, DISTRICT, AND SCHOOL POLICIES ALLOW FLEXIBILITY TO SUPPORT INNOVATIVE INSTRUCTIONAL MODELS

ASSIST SCHOOLS AND DISTRICTS TO WORK WITHIN THE CURRENT FUNDING AND POLICY MODELS TO PROMOTE GREATER INNOVATION TO EXPAND OPPORTUNITIES FOR STUDENTS.

- Create pathways to understand existing funding models and how they can be applied to effectively implement blended learning. Specifically, highlight case studies and opportunities at the school and district level succeeding with current resources.

- Through a digital concierge or clearinghouse function, provide access to information, exemplars, and — where appropriate — guidance on how innovative instructional models such as blended learning align to various school, district, and state policies such as policies on seat time, graduation, student data privacy, staffing, technology, and concurrent enrollment.

INCREASE ACCESS TO BLENDED LEARNING OPPORTUNITIES ACROSS THE STATE THROUGH IMPROVED FUNDING MODELS THAT CATALYZE INNOVATION AND THROUGH STATE AND LOCAL POLICIES THAT CONSIDERS INNOVATIVE INSTRUCTIONAL MODELS.

- Support and be involved in statewide conversations to address Colorado's school financing models, including how funding can be more equitably addressed statewide.

- Contribute to other policy discussions on the vision for Colorado's education future, accountability, et al., where appropriate. Networking, marketing, and communication as a pathway toward ensuring that blended learning voices are included in these conversations.

Technology + Digital Resources

The issue: Blended learning relies on (1) student access to adequate hardware and connectivity at school, in the home, and in the community and (2) teacher and student access to affordable, high quality digital content (e.g., instructional course content and accompanying software).

The current situation and need:

Bandwidth and connectivity inside and outside of schools*:* Colorado school districts have made progress in expanding bandwidth to enable sufficient connectivity in classrooms through multiple efforts. Some efforts were statewide while others are more regionalized. However, connectivity challenges remain, particularly in rural school districts which face difficulties building out the "last mile" to reach schools in a cost-effective way. Further, employees in rural school districts are wearing multiple hats and may not always have the capacity and support to solve these problems.

Education SuperHighway,[10] a nonprofit focused on upgrading internet access in every public-school classroom in America, has set a standard of connectivity to support sufficient access for learning in a digital environment. According to Education SuperHighway, as of 2016, 396,888 students in Colorado need more bandwidth to meet the minimum connectivity goal; 78 percent of school districts reported sufficient Wi-Fi in all classrooms; and 66 percent of school districts are maximizing the bandwidth they are getting for their budgets based on the amount of money being spent to provide broadbrand to the district.[11]

Bandwidth is not consistently identified as the most significant challenge for schools and districts interested in utilizing a blended learning approach. Network architecture[12] also can be a barrier. Some of these issues can be addressed through in-school models that avoid having students connected all the time, and through hardware for digital learning that does not require constant Wi-Fi access and/or power sources. Discrepancies in pricing for fiber and hardware in different districts also create challenges for access and equity. Districts do not always know how to best evaluate the costs, quality, necessity, and opportunities for price negotiation for the products they are interested in purchasing.

In addition, districts are in different stages of determining how to institute and implement policies related to hardware (e.g., computers, tablets, and other devices), including 1:1 (student: device) and "bring your own" device policies. There is no statewide data collection on hardware accessibility. There are also a variety of learning management support systems that schools and districts must choose among to support digital content and courses.

Finally, some students face bigger hurdles in accessing adequate connectivity outside of school hours.

Digital content*:* A plethora of providers offer digital content at varying prices and varying degrees of quality to schools and districts across Colorado. Navigating the complex world of digital content can be

[10] www.educationsuperhighway.org/

[11] stateofthestates.educationsuperhighway.org/?postalCd=CO

[12] Network architecture refers to the layout of the network, consisting of the hardware, software, connectivity, communication protocols, and mode of transmission, such as wired or wireless. ccm.net/faq/2761-what-is-network-architecture

difficult, especially without the time and expertise to understand where to find the resources, what to look for as an indicator of quality, what to pay, and how to use it to enhance instruction and learning. Most small and medium size districts cannot offer adequate school and district level support for these decisions. As a result, the burden falls to many individual teachers to create and curate content. The expense of content also makes it difficult to scale blended learning strategies. Colorado educators need solutions for curation, quality, cost, and ease of access so they can more easily and effectively move from the textbook to the digital age.

A digital resource warehouse — often referred to as "open educational resources" (OER) — can help provide a solution. Open Educational Resources are freely accessible, openly licensed documents and media that are useful for teaching, learning, and assessing as well as for research purposes. OER is a leading trend in education that leverages the advantages of using quality, curated technology to support districts and schools. An OER enables access to vetted, high quality, whole course content that educators can draw individual lessons from to incorporate into their blended learning strategies. This content requires curation, i.e., organization and indexing for easy accessibility, and should be continuously reviewed, updated, and refined. To be truly effective, an OER needs to be accompanied by an effective learning management system, teacher training, staff, and funding to sustain curation, and district support. In other words, investing in human capital is a key step to realizing the benefits of investing in digital content. Investing in educator training that results directly in the creation of digital content to be shared through OER is mutually beneficial for districts, educators, and students.

Beyond OER, other opportunities include working across the state to achieve equitable and affordable pricing of connectivity, hardware, software, and digital resources for all districts, regardless of size. Collective procurement and consortium pricing approaches can help achieve lower costs on necessary tools and technologies. New partnerships can also enhance development of course content.

Roadmap Priorities: The roadmap sets a goal for all students and teachers to have access to quality technology and tools to enable blended learning. To support this goal, the roadmap identifies statewide strategies to connect stakeholders with information and resources that support local decisions on connectivity, hardware, and software. The roadmap also prioritizes collaborative efforts to increase access, enhance quality, and reduce costs of these technologies. The roadmap prioritizes connecting schools and districts with the information they need to make decisions on, navigate, and troubleshoot options related to technology and digital resources for blended learning. It also prioritizes advancing affordable, equitable pricing through collective procurement strategies and consortium pricing. Finally, it promotes the ongoing development and curation of high quality, free content through Colorado's OER platform (provided by CEL) and the development of new content through private sector partnerships.

TECHNOLOGY AND DIGITAL RESOURCES

***The Issue**: Blended learning relies on (1) student access to adequate hardware and connectivity at school, in the home, and in the community and (2) teacher and student access to affordable, high quality digital content (e.g., instructional course content and accompanying software).*

GOAL

ALL STUDENTS AND TEACHERS HAVE ACCESS TO QUALITY TECHNOLOGY AND TOOLS TO ENABLE BLENDED LEARNING.

CONNECT STAKEHOLDERS WITH THE INFORMATION AND RESOURCES THAT SUPPORT DISTRICT AND SCHOOL EFFORTS TO ENSURE EQUITABLE, AFFORDABLE, AND ACCESSIBLE TECHNOLOGY AND TOOLS FOR BLENDED LEARNING.

Create and market a digital information hub (e.g., a "Blended Learning iHUB") including technology and connectivity resources. Vet, organize, and link to existing resources and initiatives on topics including:

1) Guidance, checklists, and decision support for choosing technology, tools, and hardware to support blended learning
2) Pricing options to cost-effectively address connectivity and hardware issues
3) Community case studies on expanding access to Wi-Fi
4) Support resources for addressing issues related to bandwidth, network architecture, integrated information systems, and networks

PROMOTE EQUITABLE AND AFFORDABLE PRICING OF CONNECTIVITY, HARDWARE, SOFTWARE, AND DIGITAL RESOURCES FOR ALL DISTRICTS, REGARDLESS OF SIZE.

Work with stakeholder groups to enhance existing efforts to increase bandwidth, hardware, learning management systems, and digital content for districts statewide. This includes supporting efforts to reduce overall costs to school districts (e.g., through strategies to maximize collective and/or statewide procurement and consortium pricing).

ESTABLISH, ENHANCE, AND ADVANCE STATEWIDE OPEN EDUCATIONAL RESOURCE (OER) PLATFORMS TO ENABLE EASE OF ACCESS, USABILITY, AND AFFORDABILITY OF DIGITAL CONTENT.

Create capacity and funding to sustain curation of courses to ensure quality resources in the CEL OER platform. Raise funding to sustain creation of new OER courses via teacher training.

PROMOTE DEVELOPMENT OF HIGH QUALITY CONTENT THROUGH NEW PARTNERSHIPS.

Solicit, leverage, and enhance private partnerships to create high quality full course content on specific topics. Develop marketing collateral and criteria; identify key networks and events for recruitment.

Tracking Roadmap Progress

Achieving success will require collaboration among many partners statewide. CEL will help foster this collaboration and track progress.

The roadmap is based on a theory of change that a coordinated statewide approach will result in increased access to and use of blended learning strategies, which ultimately will lead to greater equity, personalization, competency-based learning opportunities, and post-graduation success for students. However, the meaningful measurement of these end-goal outcomes/impacts would require significant resources above current allocations that would need to be dedicated to the establishment, tracking, and dissemination of corresponding metrics.

The following approaches to tracking progress are selected based on existing funding, feasibility, and privacy requirements for performance monitoring. They also acknowledge that, as a local control state, Colorado's schools and districts will ultimately determine their level of participation in blended learning as well as in data collection processes. CEL and other partners will also continue to monitor, share, and adapt to new research and case studies documenting the relationship between blended learning models and these end goals.

TRACKING ROADMAP PROGRESS

ANNUAL CEL REPORTING

Legislatively-required CEL annual reports will continue to document consultation, professional development, supplemental course offerings, and enrollment specifically offered through CEL. In addition, they will be expanded to provide a qualitative scorecard on implementation of roadmap strategies and activities.

EXPLORING SYSTEMIC DATA COLLECTION

CEL will work in partnership with Colorado Department of Education, districts and schools, and additional stakeholders to explore additional mechanisms for tracking blended learning progress systemically, including the potential to enhance existing CDE data collection processes to capture information on blended learning course offerings, participation and completion, policies and planning, technology and digital resources, human capital, and case studies and lessons learned.

Additional References and Resources

The following resources and references provide a sampling of information available for further exploration of blended learning.

Organizations:

Blended Learning Universe (BLU). (2017). www.blendedlearning.org/resources/
The Blended Learning Universe is a comprehensive online hub, curated by the Clayton Christensen Institute, providing blended learning resources including practical guides, video tutorials, downloadable worksheets, and a directory of blended learning programs worldwide.

Buck Institute for Education (BIE). (2017). www.bie.org/resources
BIE is a mission-driven nonprofit that creates, gathers, and shares high-quality project-based learning instructional practices and products and provides services to teachers, schools, and districts.

Clayton Christensen Institute. *Personalized & Blended Learning.* (2017).
www.christenseninstitute.org/blog/topics/personalized-blended-learning/
The Clayton Christensen Institute is a nonprofit, nonpartisan think tank dedicated to improving the world through disruptive innovation. The Institute offers a framework for understanding issues around education, healthcare, and economic prosperity.

Colorado Digital Learning Solutions (CDLS). (2017). www.coloradodls.org
CDLS is the state-supported provider of supplemental coursework for Colorado students. The goal of CDLS is to use state funds to build a sound, self-sustaining supplemental model for students and schools in Colorado.

Consortium for School Networking (CoSN). (2017). www.cosn.org
CoSN is a professional association for school system technology leaders.

Education Superhighway. (2017). www.educationsuperhighway.org
Education Superhighway is focused on upgrading Internet access in every public school classroom in America so that every student has the opportunity to take advantage of digital learning.

eNet Learning. (2017). www.enetlearning.org
eNet Learning is a project of the Colorado BOCES Association and Foundation in partnership with the Centennial BOCES. eNet Learning's mission is to provide high-quality content, professional development, and resources that support the evolving needs of educators and student learning.

iLearn Collaborative. (2017). www.ilearncollaborative.org
iLearn Collaborative seeks to advance the practice of student-centered learning by integrating technology with strong instructional practice to ensure equal access to education for all.

International Association for K-12 Online Learning (iNACOL). (2017). www.inacol.org
iNACOL's mission is to catalyze the transformation of K-12 education policy and practice to advance powerful, personalized, learner-centered experiences through competency-based, blended and online learning.

KnowledgeWorks. (2017). www.knowledgeworks.org
KnowledgeWorks is a national organization committed to providing every learner with meaningful personalized learning experiences that ensure success in college, career and civic life.

State Education Technology Directors Association (SETDA). (2017). www.setda.org
SETDA is a membership association launched by state education agency leaders to serve, support and represent interests and needs with the use of technology for teaching, learning, and school operations.

Articles and Studies:

Adams Becker, S., Freeman, A., Giesinger Hall, C., Cummins, C., and Yuhnke, B. (2016). *NMC/CoSN Horizon Report: 2016 K-12 Edition*. Retrieved from: http://cdn.nmc.org/media/2016-nmc-cosn-horizon-report-k12-EN.pdf

Bonnot, L. (2015). Open Educational Resources (OER) Stories, Policies, and Resources. *International Association for K-12 Online Learning.* Retrieved from: https://www.inacol.org/resource/open-educational-resources-oer-stories-policies-and-resources/

Cadran, A., and Soots, B. (2016). OER: Instructional Materials and Promising Practices for Teachers. *International Association for K-12 Online Learning.* Webinar. Retrieved from: https://www.inacol.org/resource/oer-instructional-materials-and-promising-practices-for-teachers/

Chuong, C. and Mead, S. (2014). A Policy Playbook for Personalized Learning: Ideas for State and Local Policymakers. *Bellwether Education Partners.* Retrieved from: https://bellwethereducation.org/sites/default/files/PolicyPlays_Final.pdf

Consortium for School Networking (CoSN). (2017). *Advancing Digital Equity and Closing the Homework Gap: The Need to Connect Students at Home.* Retrieved from: http://cosn.org/sites/default/files/Digital_Equity_Homework_Gap_5.11.17.pdf

Education Elements. *The Positive Power of Personalized Learning: Education Elements Impact Report 2015 – 2016.* Retrieved from: https://www.edelements.com/hubfs/Impact-report-2015-16/EducationElements_Personalized_Learning_ImpactReport_2015-2016.pdf

Evans, J. (2017). Speak Up 7 for 2017: Top Digital Learning Trends in K-12 Schools Today. *Speak Up.* Blog. Retrieved from: http://blog.tomorrow.org/index.php/2017/05/10/speak-up-7-for-2017-top-digital-learning-trends-in-k-12-schools/

ExcelinEd. (2017). *Competency-Based Education & School Finance: Lessons from Online and Community Based Courses.* Retrieved from: http://www.excelined.org/wp-content/uploads/2017/05/ExcelinEd.Competency-BasedEducationAndSchoolFinance.May2017.pdf

The Hechinger Report. *Blended Learning.* (2017). http://hechingerreport.org/special-reports/blended-learning/

Jones, R., Fox, C. and Weeks, T. (2017). Navigating the Digital Shift II: Implementing Digital Instruction Materials for Learning. *State Educational Technology Directors Association (SEDTA).* Retrieved from: http://www.setda.org/wp-content/uploads/2017/06/Navigating_the_shiftII_final_June242017.pdf

Jones, R. and Fox, C. (2016). State K-12 Broadband Leadership: Driving Connectivity and Access. *State Educational Technology Directors Association (SETDA)*. Retrieved from: http://www.setda.org/wp-content/uploads/2016/04/Broadband_2016.4.11.16_updated.pdf

Kim., A. (2015). Personalized Learning Playbook. *Education Elements*. Retrieved from: https://www.edelements.com/hubfs/PL_Playbook/FINAL.Complete.PL.Playbook.Revised060615.pdf

KnowledgeWorks. (2017). *Traditional Education vs. Competency-Based Education.* Retrieved from: http://www.knowledgeworks.org/sites/default/files/u1/cbe-versus-traditional-education.pdf

Matsuoka, C., Marks, E., Leveine, J., and Goodwin, R. (2013). The Role of Leadership in the Implementation of Successful Blended Learning Programs. *International Association for K-12 Online Learning.* Retrieved from: https://www.inacol.org/resource/the-role-of-leadership-in-the-implementation-of-successful-blended-learning-programs/

Murphy, R., Snow, E., Mislevy, J., Gallagher, L., Krum, A., and Wei, X. (2014). Blended Learning Report. *Michael and Susan Dell Foundation.* Retrieved from: https://www.msdf.org/wp-content/uploads/2016/01/MSDF-Blended-Learning-Report-May-2014.pdf

Nagel, D. (2017). Is Effective Ed Tech Implementation Extremely Important? Depends Who's Being Asked. *The Journal*. Retrieved from: https://thejournal.com/articles/2017/05/10/is-effective-ed-tech-implementation-extremely-important.aspx

National Center on Time & Learning. (2014). *Supporting Student Success through Time and Technology.* Retrieved from: http://www.timeandlearning.org/sites/default/files/resources/timeandtechnologyguide.pdf

Pane, J. F., Steiner, E. D., Baird, M. D., and Hamilton, L. S. (2015). Continued Progress: Promising Evidence on Personalized Learning – Report. *RAND Corporation* and Bill *& Melinda Gates Foundation.* Retrieved from: http://k12education.gatesfoundation.org/resource/continued-progress-promising-evidence-on-personalized-learning-2/

Sturgis, C. (2017). In Pursuit of Equality: A Framework for Equity Strategies in Competency-Based Education. iNACOL *National Summit on K-12 Competency-Based Education.* Retrieved from: http://www.competencyworks.org/wp-content/uploads/2017/06/CompetencyWorks-InPursuitOfEquality-AFrameworkForEquityStrategiesInCompetencyBasedEducation.pdf

COLORADO BLENDED LEARNING ROADMAP – Appendix A, July 2017

Purpose: Provide a pathway to support schools and districts that wish to implement blended learning strategies by identifying statewide priorities, goals, objectives and strategies.

Vision: Enhance student achievement and prepare graduates for post-secondary and workforce readiness through blended learning that offers equitable, personalized, competency-based, project-based learning.

Priority	*Issue*	*Goals*	*Objectives*	*Strategies*
HUMAN CAPITAL	Successful implementation of blended learning requires (1) educators with skills to deliver instruction complemented by digital tools and students ready to learn through blended instruction and (2) support and leadership from a wide range of stakeholders.	Blended learning and its benefits are widely understood and championed by key constituencies.	Create support for blended learning among all stakeholders	Provide dialogue, tools and resources to effectively communicate about and create support for blended learning across the state. e.g.: • Create a multi-media representation of blended learning to share with parents, teachers, community, policy makers, etc. (Use this to provide clarification and create understanding about blended learning). • Create flexible communication plan templates that can be tailored to different audiences — superintendents, community, school board, teachers, etc. • Hold community forums/listening sessions/symposia with parents to talk about effective blended learning models and strategies. • Present about blended learning at already scheduled meetings of school and district leadership. • Identify champions of blended learning in each school district. Set up a system for effective networking and learning among these champions. • Identify, nominate and recognize/acknowledge “lab sites” around the state to showcase effective blended learning strategies and provide tours of these sites. • Create a virtual networking community of sharing between district and school leaders with subgroups in each specialty area.

HUMAN CAPITAL (continued)		Educator leaders and teachers are prepared to effectively implement blended learning strategies in their classrooms.	Increase the capacity of educator leaders and teachers to deliver blended learning instructional methods and strategies.	Provide professional development for educator leaders and teachers in blended learning strategies: • Identify exemplars and leaders in Colorado. Pair and share local experts with district and school leaders. • Foster coaching, mentoring, and support for teachers using schools that have implemented successful blended learning programs as proof points. • Build a cohort of blended learning teachers and champions to share lessons learned. • Arrange district and school visits for exposure to successful programs. Advocate for blended teaching models in teacher prep programs: • Work with higher education on a strategic plan for what incorporating blended learning in teacher prep programs would look like. • Look at teacher programs already connected to K12 districts and how to incorporate blended learning models into their courses.
			Support the creation of local plans for systemic sustainability of blended learning	Provide consulting and templates for planning. Create cohorts of local expertise and affordable resources. Offer leadership/professional development training programs. Identify and showcase classroom, school and district best practices to leaders.

Priorities	*Issue*	*Goals*	*Objectives*	*Strategies*
POLICY AND FUNDING	Although schools are finding pathways to work within existing polices to enable flexibility for innovative instruction, a legislative review of Colorado's education financing system would be beneficial. Schools and districts would benefit from funding policies with enhanced systemic flexibility that adequately and efficiently allow for more innovation at scale. Blended learning can be responsive to and support other policies at the state, district, and school; schools and districts may benefit from assistance in understanding how to align blended learning with existing state and local policies.	State, district and school policies allow flexibility to support innovative instructional models.	Assist schools and districts to work within the current funding and policy models to promote greater innovation to expand opportunities for students.	Create pathways to understand existing funding models and how they can be applied to effectively implement blended learning. Specifically, highlight case studies and opportunities at the school and district level succeeding with current resources. Through a digital concierge or clearinghouse function, provide access to information, exemplars, and — where appropriate — guidance on how innovative instructional models such as blended learning align to various school, district, and state policies such as policies on seat time, graduation, student data privacy, staffing, technology, and concurrent enrollment.
			Increase access to blended learning opportunities across the state through improved funding models that catalyze innovation and through state and local policies that consider innovative instructional models.	Support and be involved in statewide conversations to address Colorado's school financing models, including how funding can be more equitably addressed statewide. Contribute to other policy discussions on the vision for Colorado's education future, accountability, et al., where appropriate. Networking, marketing and communication as a pathway toward ensuring that blended learning voices are included in these conversations.

Priorities	*Issue*	*Goals*	*Objectives*	*Strategies*
TECHNOLOGY AND DIGITAL RESOURCES	Blended learning relies on (1) student access to adequate hardware and connectivity at school, in the home, and in the community and (2) teacher and student access to affordable, high quality digital content (e.g., instructional course content and accompanying software).	All students and teachers have access to quality technology and tools to enable blended learning.	Connect stakeholders with the information and resources that support efforts to ensure equitable, affordable, and accessible technology and tools for blended learning.	Create and market a digital information hub (e.g., a Blended Learning iHUB) including technology and connectivity resources. Vet, organize and link to existing resources and initiatives on topics including: (1) Guidance, checklists, and decision support for choosing technology, tools and hardware to support blended learning (2) Pricing options to cost-effectively address connectivity and hardware issues (3) Community case studies on expanding access to Wi-Fi (4) Support resources for addressing issues related to bandwidth, network architecture, integrated information systems and networks
			Promote equitable and affordable pricing of connectivity, hardware, software, and digital resources for all districts, regardless of size.	Work with other stakeholder groups to enhance existing efforts to increase bandwidth, hardware, learning managements systems, and digital content for districts statewide. This includes supporting efforts to reduce overall costs to school districts, e.g., through strategies to maximize collective and/or statewide procurement and consortium pricing.
			Establish, enhance, and advance statewide open educational resource (OER) platforms to enable ease of access, usability, and affordability of digital content.	Create capacity and funding to sustain curation of courses to ensure quality resources in the CEL OER platform. Raise funding to sustain creation of new OER courses via teacher training.
			Promote development of high quality content through new partnerships.	Solicit, leverage, and enhance private partnerships to create high-quality full course content on specific topics. Develop marketing collateral and criteria as well as identify key networks and events for recruitment.

Colorado Blended Learning Roadmap
Appendix B
Summary of Interview, Meeting and Survey Outreach Findings

Background

As part of its outreach to support Colorado Empowered Learning in the development of the Colorado Blended Learning Roadmap, Keystone Policy Center conducted the following between February and April, 2017:

1) Thirteen outreach meetings across the state and two virtual meetings
2) An online survey for stakeholders across the state
3) A trends assessment of blended learning strategies in other states by interviewing seven states on their blended and/or online learning programs

While outreach to other states provided a high-level overview of other programs and their lessons learned, outreach within Colorado provided more in-depth feedback at the practitioner and community level from district and school leaders, teachers and parents. Top-level outreach findings are provided below; details on the methods and findings of these outreach approaches are provided separately.

Key Outreach Findings

- **Definition of blended learning**. Across other states and within Colorado, there were varying definitions and assumptions around 'blended learning,' what it is, and what it is not. Strategies must be developed to continue to build a common understanding of blended learning across the state and among all stakeholder groups.
- **Benefits of blended learning.** Within Colorado and across other states, there was an emphasis on blended learning's ability to promote access and equity in educational opportunities across the state, flexibility to meet student needs, and personalized learning.
- **Human capital.** Human capital was consistently highlighted as a barrier and priority for Colorado and for other states. Human capital challenges include:
    - **Teacher training**: This includes training of teachers on blended learning strategies, training on specific technologies, and integration of blended learning into teacher preparation. Based on this feedback, investment in addressing human capital – including through robust professional development – should be a priority for the roadmap.
    - **Support from leadership and communities**: Leadership support of blended learning (including support from principals) is key in ensuring the success of programs. Community understanding and buy-in –including from parents - is also critical and can be enhanced through engagement and outreach to address questions related to definitions, models and outcomes of blended learning.
- **Funding.** Discussions of funding challenges were heard throughout Colorado. In particular, Colorado stakeholders emphasized the misalignment between seat time policies and the need for innovation/personalization/competency-based models.
- **Technology, digital resources, and policies.** Discussions also addressed barriers and priorities related to access to wi-fi outside of schools, course content and learning management systems, and school, state and district policies.

Colorado Blended Learning Roadmap
Appendix C
Key Data and Trends from Statewide Meetings and Online Survey

BACKGROUND

To inform the Colorado Blended Learning Roadmap (the Roadmap), Colorado Empowered Learning (CEL) partnered with Keystone Policy Center (Keystone) to hold a series of outreach meetings across the state of Colorado[1] in March and April 2017. These thirteen meetings were used to gather feedback from interested stakeholders on the key priorities to include in the Roadmap. Each meeting lasted approximately 1.5 hours. Following an overview of the Roadmap history and process, participants spent the majority of the meeting discussing blended learning's contribution to their vision of education in Colorado, articulating barriers and challenges to implementing blended learning, highlighting success stories from their experiences, and discussing their main priorities for blended learning to include in the Roadmap. Additionally, the meetings included a polling session that focused on participants' experience with blended learning, roadblocks to implementing blended learning, and where priorities should be placed in implementing a statewide blended learning plan.

Additionally, CEL and Keystone collaborated with Kickup to administer an online survey to gather input for the Roadmap. This survey was aimed at gathering perspectives and information on blended learning activities and efforts across the state. The survey consisted of questions focused on demographics, barriers to implementing blended learning and priorities for the roadmap. District administrators who participated in the survey were provided additional questions focused on gaining information on current district practices regarding human capital, policies, digital resources, funding, Wi-Fi access and student to device ratios.

Two 'virtual meetings' provided an opportunity for participants across the state to discuss the same questions discussed at the in-person meetings; participants in the virtual meetings were asked to fill out the online survey.

Both the survey and the meetings were promoted directly to district leaders, principals, teachers, parents, students and other community members, primarily through newsletters, direct emails, postings in community calendars and media coverage and through outreach to statewide administrator, teacher and parent membership organizations.

In total, 68 people participated in the statewide meeting polling sessions and 117 participated in the online survey for a combined total of 185 participants; some meeting participants chose not to participate in polling. The following information is a breakdown of the data collected from these participants and main takeaways for the Roadmap from the meetings and survey.

Complete data from the online survey can be found on the Kickup dashboard at:
https://pulse.kickup.co/link/dashboard/f32e849f-f4c2-443f-9d2e-708fa0020712/

[1] Thirteen outreach meetings were held across Colorado in: Alamosa, Colorado Springs, Denver, Durango, Grand Junction, Greeley, La Junta, Lakewood, Limon, Pueblo, Steamboat Springs and Sterling.
There were no attendees at the meetings in Alamosa, La Junta and Limon.

DEMOGRAPHICS

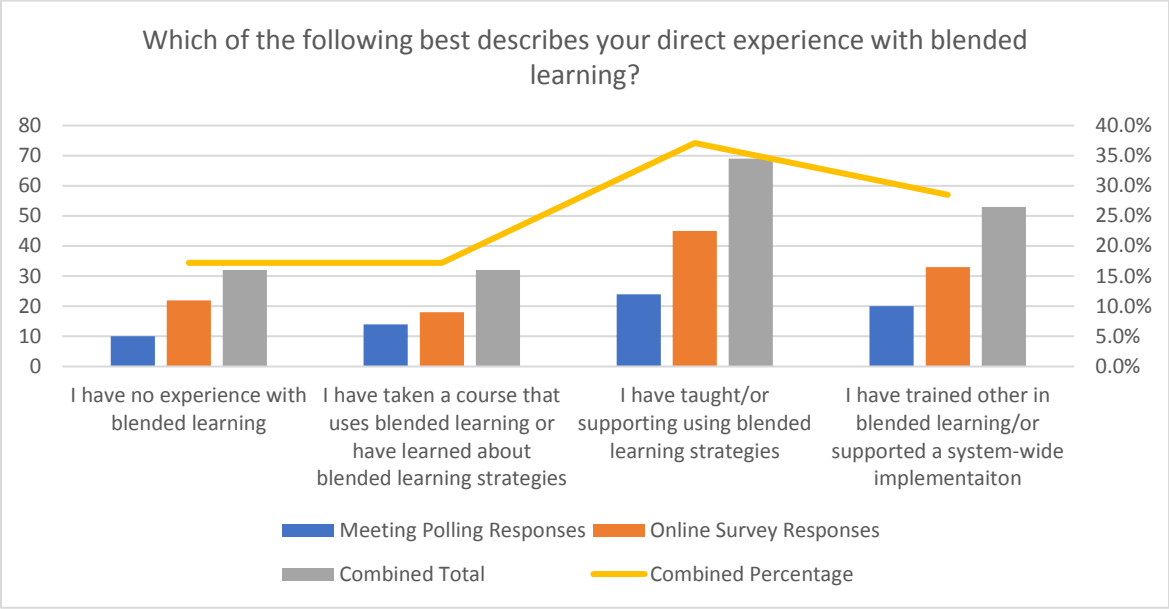
The following demographics were identified by participants most closely describing the role in which they were participating in the meeting or survey. School leaders represented the highest percentage of total respondents, followed by superintendents and teachers.

Please select the role that most closely resembles yours:	Meeting Polling Responses	Online Survey Responses	Combined Total	Combined Percentage
Superintendent	2	29	31	**16.8%**
Director of Curriculum and Instruction	6	6	12	**6.5%**
Director of Technology	1	5	6	**3.2%**
Instructional or Technology Coach	2	3	5	**2.7%**
School Leader	23	28	51	**27.6%**
School or District Staff	4		4	**2.2%**
Teacher	13	23	36	**19.5%**
Student			0	**0.0%**
Parent	7	10	17	**9.2%**
Community Member	2	2	4	**2.2%**
Professional Association Staff	2	1	3	**1.6%**
Other	6	10	16	**8.6%**

Participants of the online survey indicated which school district they were affiliated with; survey respondents included individuals from the following 56 districts and BOCES offices.

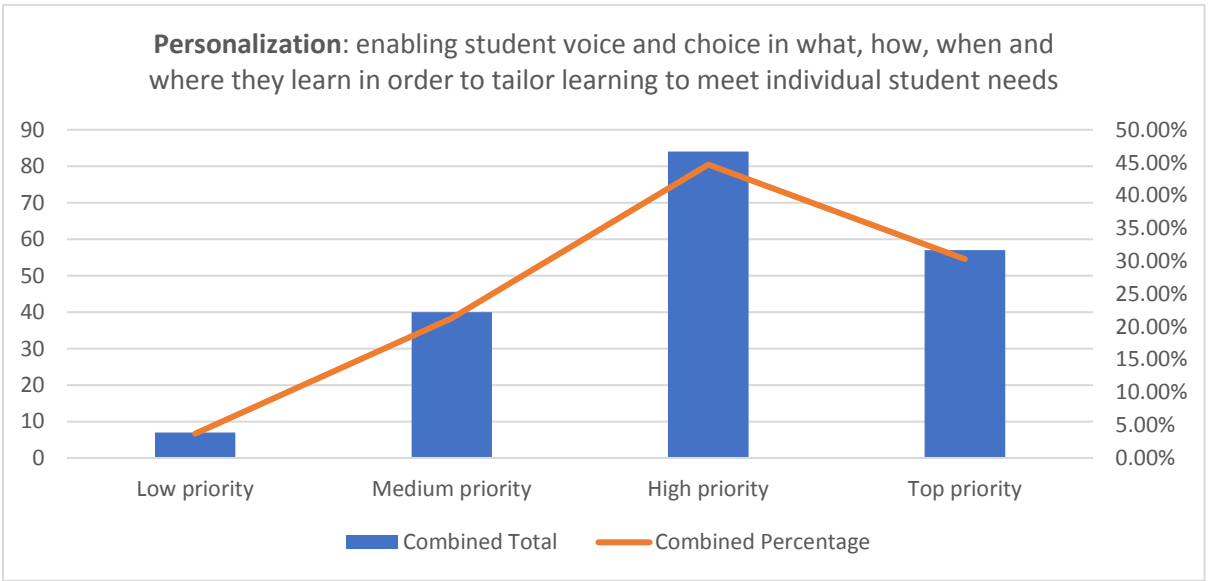
Academy 20
Adams 12 Five Star Schools
Adams-Arapahoe 28J
Alamosa RE-11J
Archuleta County 50 JT
Arriba-Flagler C-20
Bayfield 10 JT-R
Brush RE-2(J)
Buena Vista R-31
Burlington RE-6J
Byers 32J
Campo RE-6
Cherry Creek 5
Colorado Digital BOCES
Colorado Springs 11
De Beque 49JT
Delta County 50(J)
Denver County 1
Dolores County RE No.2
Douglas County RE 1
Eaton RE-2
Elizabeth C-1
Falcon 49
Fort Morgan RE-3
Garfield 16
Greeley 6
Haxtun RE-2J
Hayden RE-1
Holyoke RE-1J
Jefferson County R-1
Las Animas RE-1
Lewis-Palmer 38
Mesa County Valley 51
Montrose County RE-1J
Mountain BOCES
Mountain Valley RE1
Norwood R-2J
Otis R-3
Park County RE-2
Peyton 23 JT
Plateau RE-5
Poudre R-1
Pueblo City 60
Pueblo County 70
Ridgeway R-2
Roaring Fork RE-1
San Juan BOCES
Sangre De Cristo RE-22J
School District 27J
St Vrain Valley RE 1J
Steamboat Springs RE-2
Valley RE-1
Weld County RE-1
Weld County School District RE-3J
Weldon Valley RE-20(J)
Woodlin R-104

The following graph indicates participants' levels of experience with blended learning. The majority of participants had experience teaching using blended learning strategies and/or training others in blended learning.

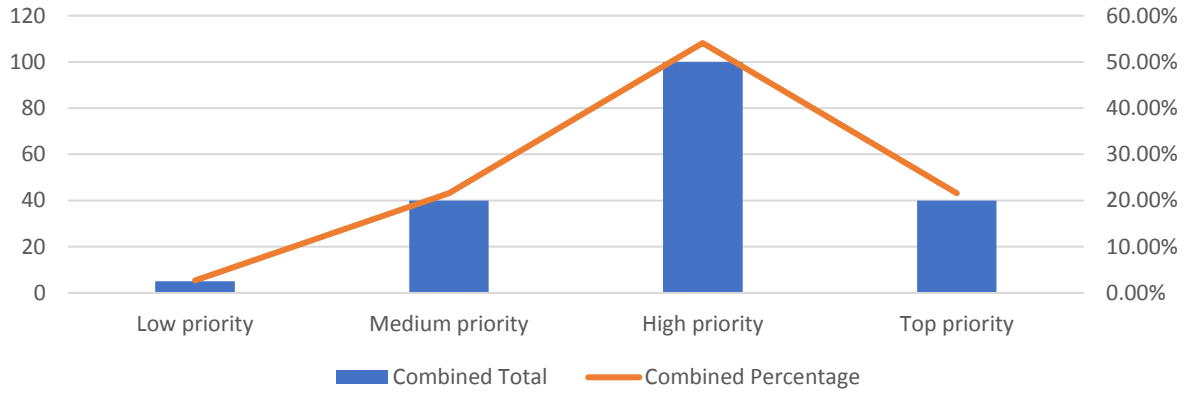


VISION FOR EDUCATION

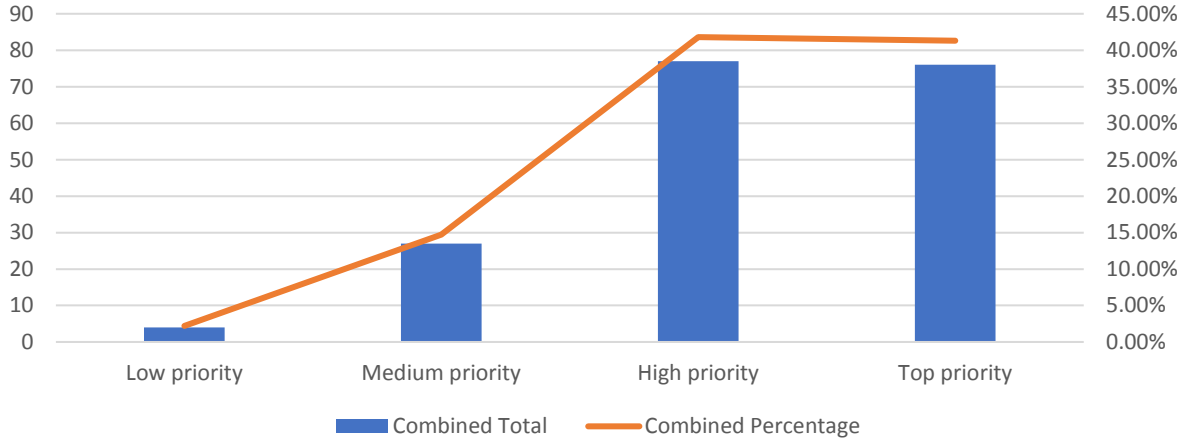
Participants of both the meeting polling and online survey were provided the following areas to prioritize, from top priority to low priority, for Colorado education to focus on for future planning, funding and implementation. Personalization, project-based learning, competency-based learning, equity, post-secondary success and global competitiveness were all viewed to be a 'high' priority or a 'top' priority by a majority of participants. Among all of these outcomes, equity was a top priority among a majority of respondents while global competitiveness ranked lowest compared to other responses.



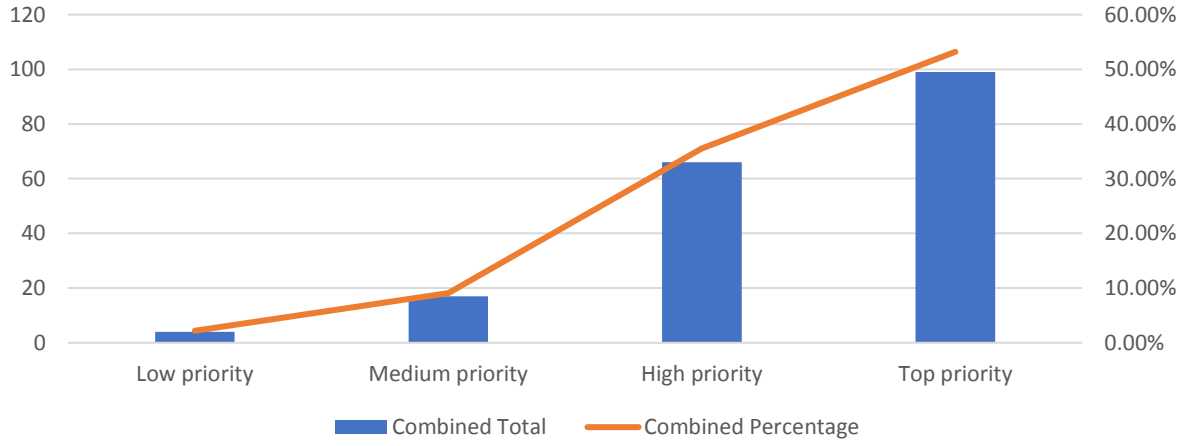
Project-based learning: Working for an extended period of time to investigate and respond to an authentic, engaging and complext question, problem or challenge.

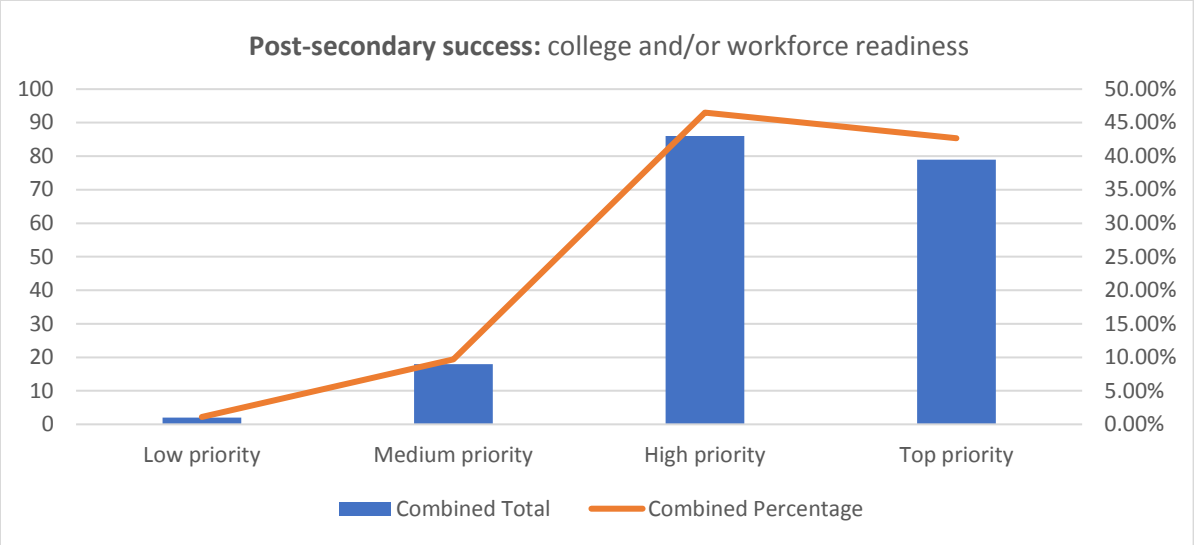


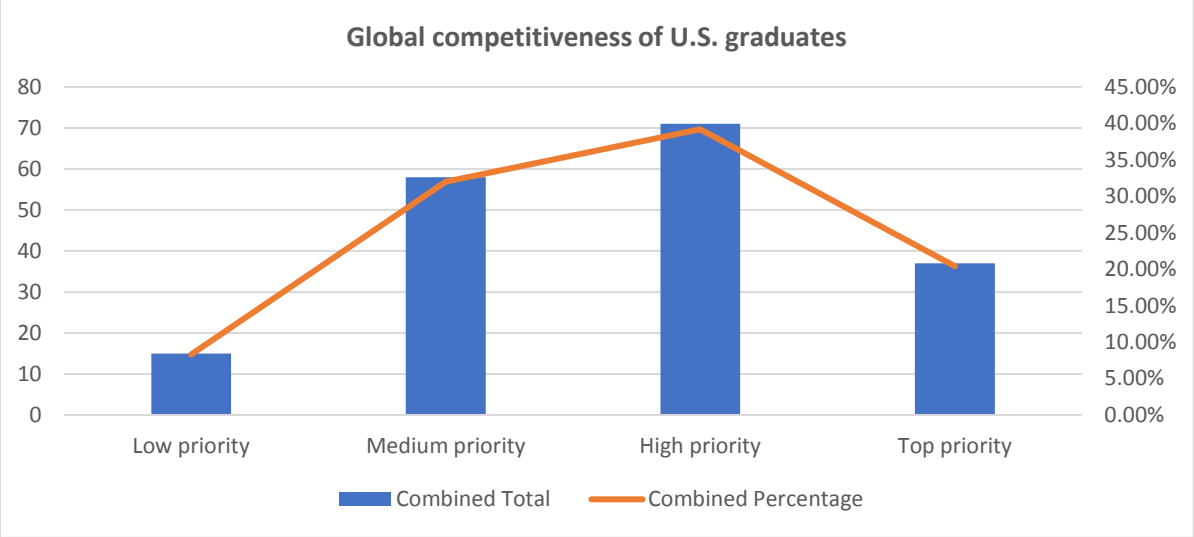
Competency-based learning: Students demonstrating that they have learned the knowledge and skills they are expected.



Equity: Ensuring students have equal access to resources, information and learning opportunities.

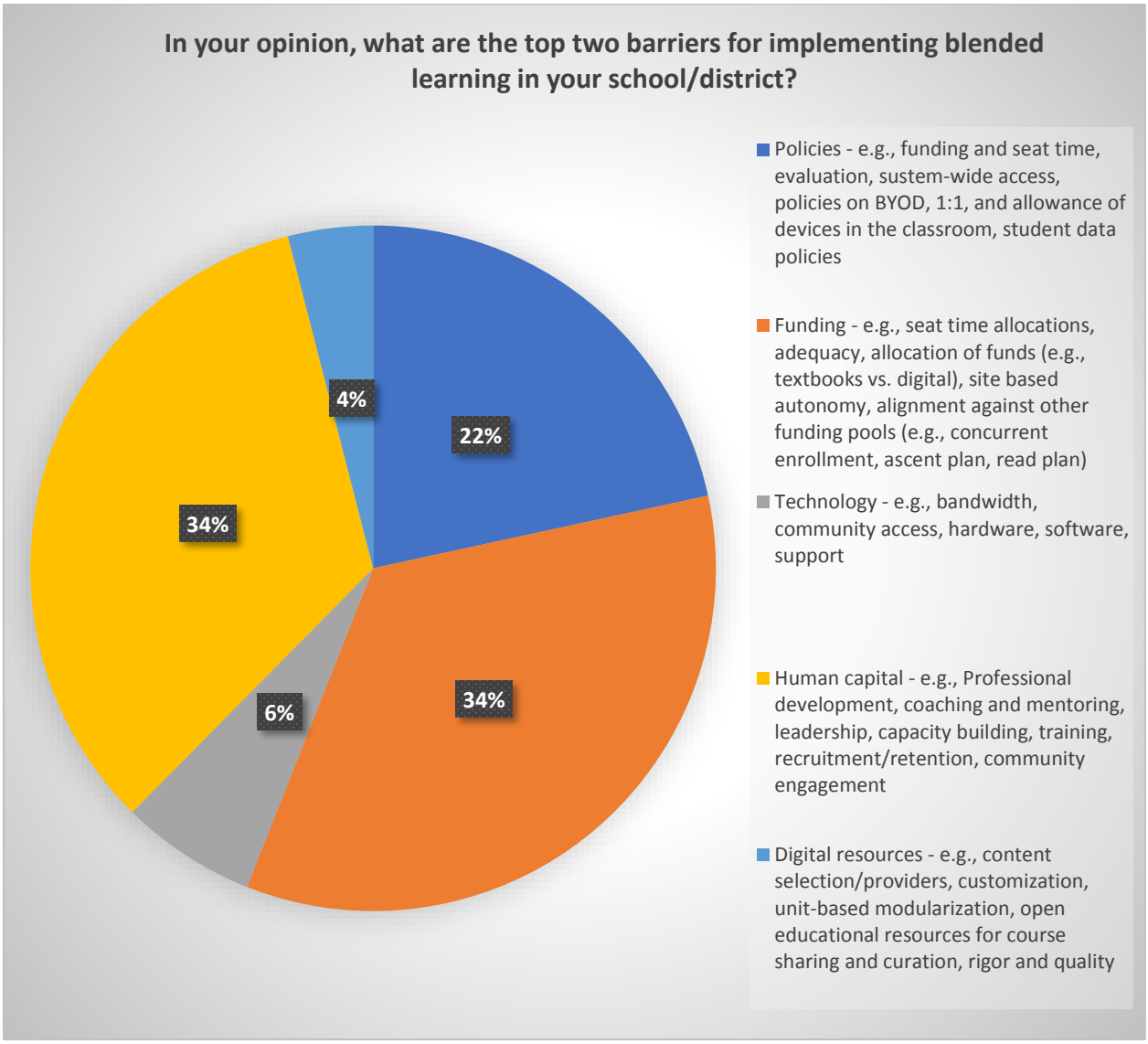



Post-secondary success: college and/or workforce readiness
100
90
80
70
60
50
40
30
20
10
0
50.00%
45.00%
40.00%
35.00%
30.00%
25.00%
20.00%
15.00%
10.00%
5.00%
0.00%
Low priority
Medium priority
High priority
Top priority
Combined Total
Combined Percentage


Global competitiveness of U.S. graduates
80
70
60
50
40
30
20
10
0
45.00%
40.00%
35.00%
30.00%
25.00%
20.00%
15.00%
10.00%
5.00%
0.00%
Low priority
Medium priority
High priority
Top priority
Combined Total
Combined Percentage

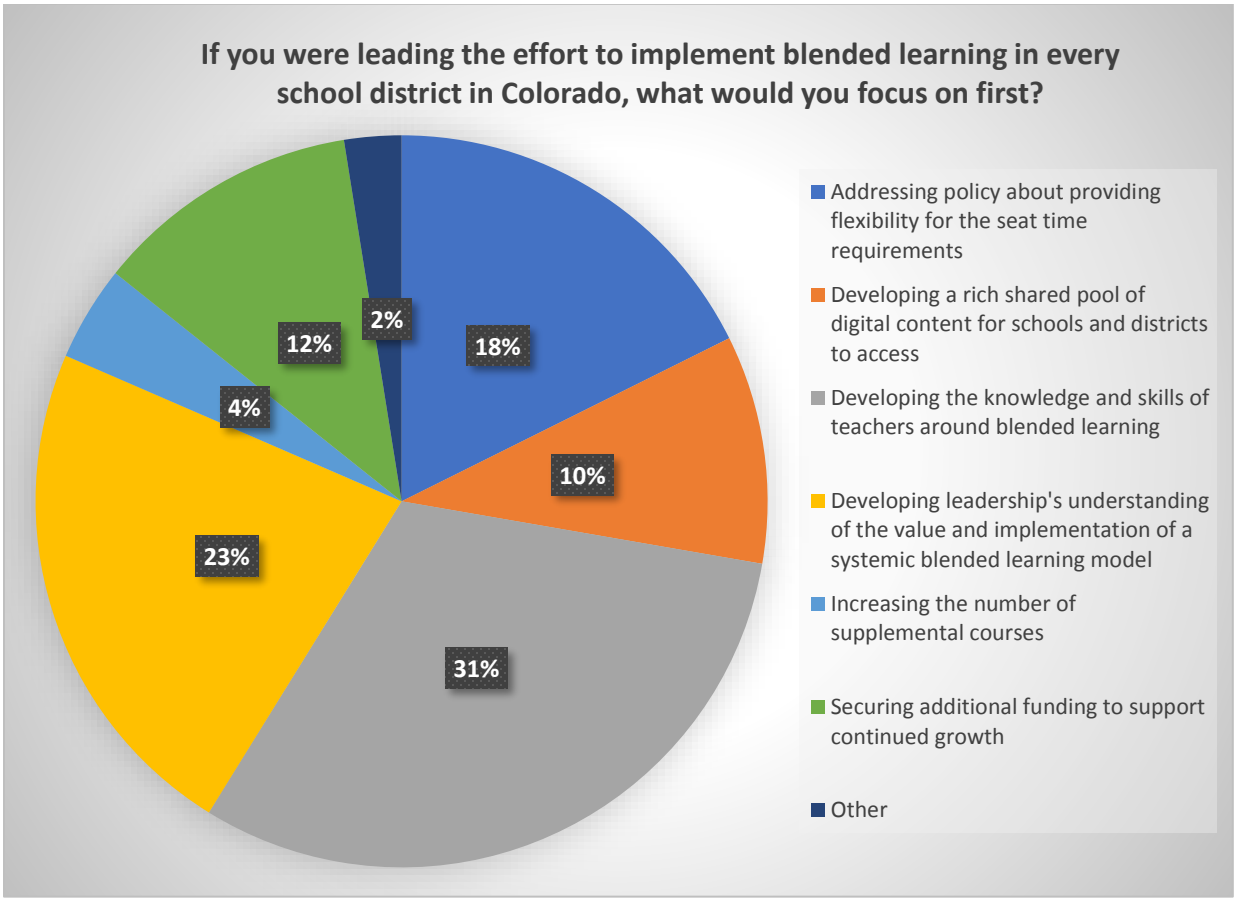
MAIN BARRIERS AND ROADBLOCKS

The following challenges to implementing blended learning were presented to meeting and survey participants. Participants were asked to identify what they believed to be the two main roadblocks to implementing blended learning. The most common barriers selected were human capital and funding; each received approximately one-third of total responses/votes. The graph below shows the combined results from both the meeting and survey responses.



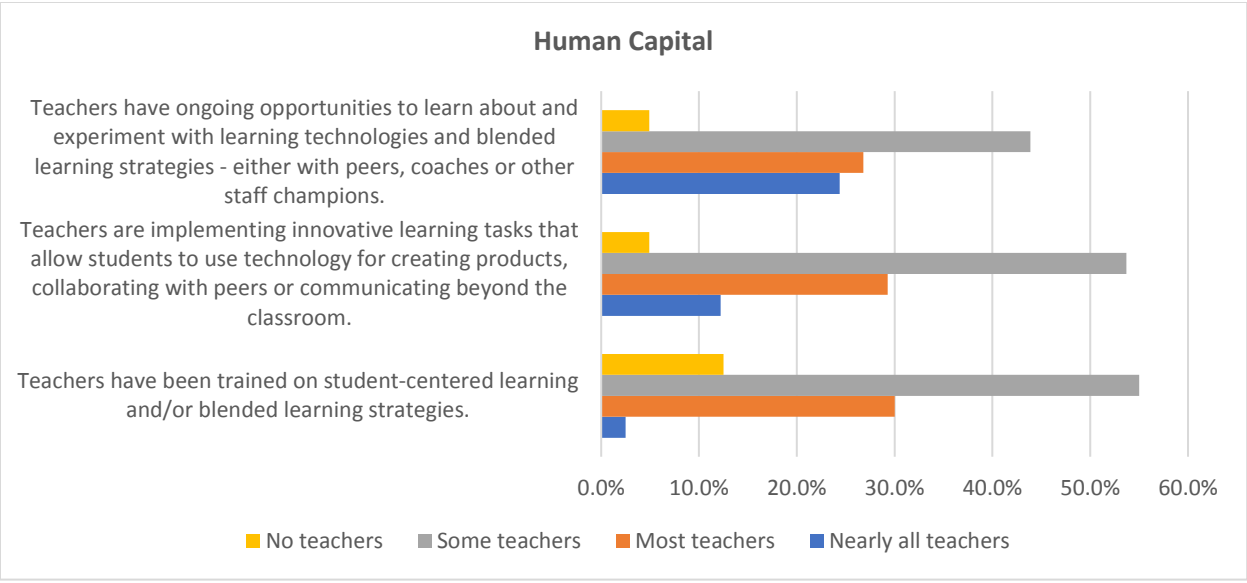
PRIORITIZATION AREAS FOR THE ROADMAP

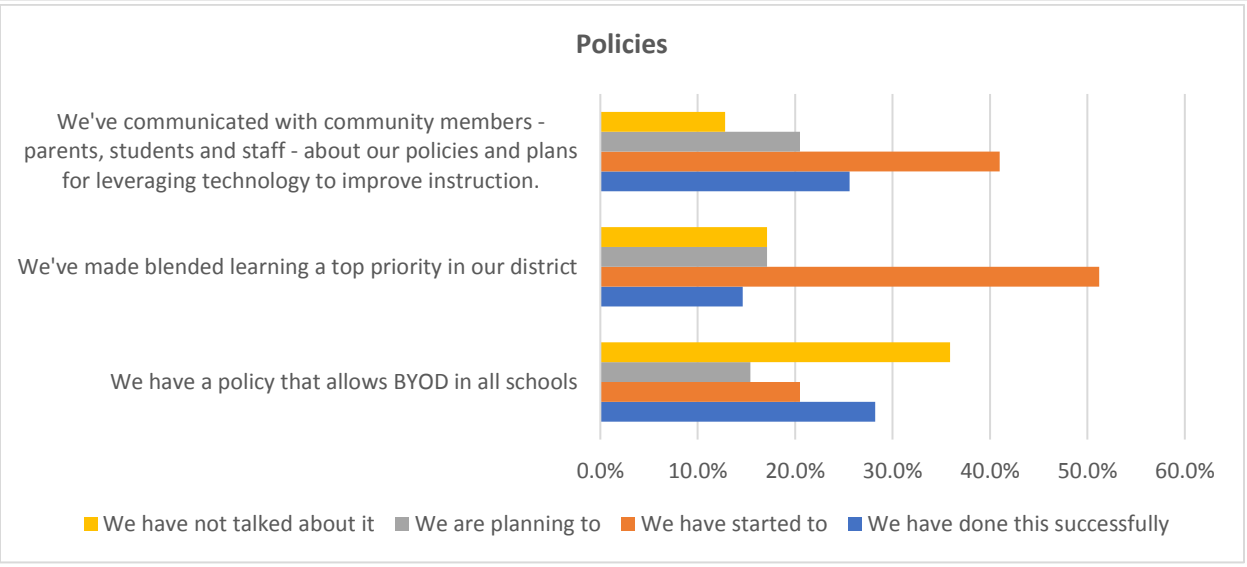
Participants were provided the following areas to prioritize within the Roadmap and were asked to pick their two highest priorities. 'Developing the knowledge and skills of teachers around blended learning' received nearly one-third of all responses. The graph below shows the combined responses from both the meeting and survey responses.

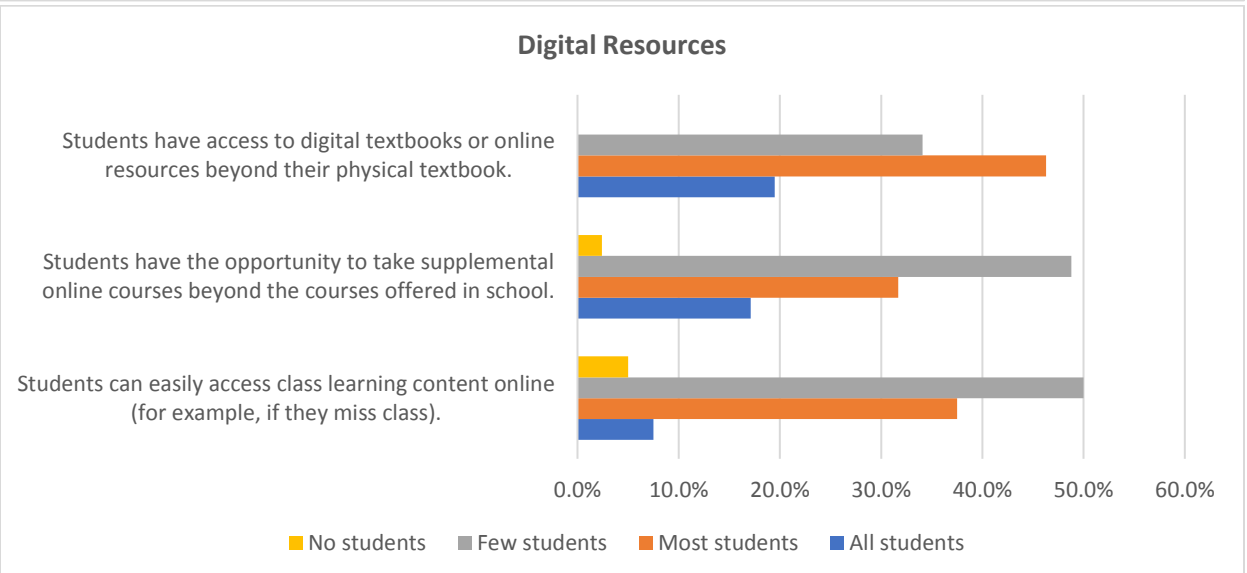


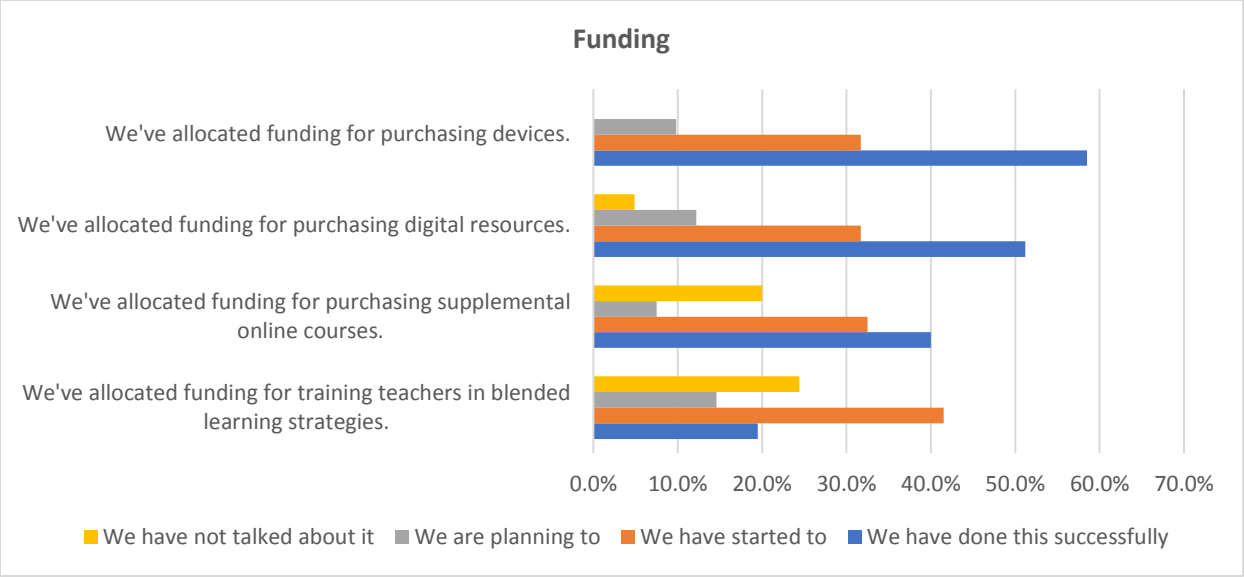
DISTRICT LEADERS AND BLENDED LEARNING IMPLEMENTATION

District leaders were given additional questions to better understand the state of blended learning in school districts across the state. In total, 41 district leaders completed the survey questions regarding current implementation. A majority of districts reported that they have started or successfully made blended learning a top priority in their schools and they have begun or successfully communicated with community members their plans for leveraging technology to improve instruction. While a majority of the district leaders that responded reported that they have allocated funding for purchasing digital resources and devices, and half have started to make blended learning a top priority in their districts, a majority reported that only some teachers have been trained on blended learning strategies. Additionally, while a majority of respondents reported that districts have allocated funds for purchasing digital resources, a majority also reported that few students could easily access online content.


Human Capital
Teachers have ongoing opportunities to learn about and experiment with learning technologies and blended learning strategies - either with peers, coaches or other staff champions.
Teachers are implementing innovative learning tasks that allow students to use technology for creating products, collaborating with peers or communicating beyond the classroom.
Teachers have been trained on student-centered learning and/or blended learning strategies.
0.0% 10.0% 20.0% 30.0% 40.0% 50.0% 60.0%
No teachers
Some teachers
Most teachers
Nearly all teachers

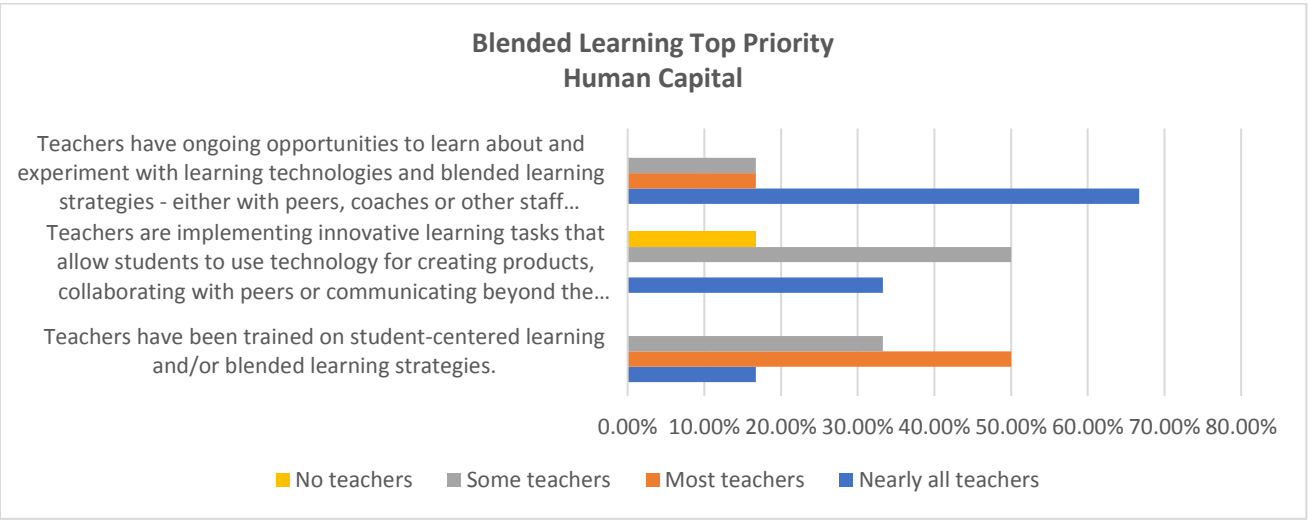

Policies
We've communicated with community members - parents, students and staff - about our policies and plans for leveraging technology to improve instruction.
We've made blended learning a top priority in our district
We have a policy that allows BYOD in all schools
0.0% 10.0% 20.0% 30.0% 40.0% 50.0% 60.0%
We have not talked about it
We are planning to
We have started to
We have done this successfully

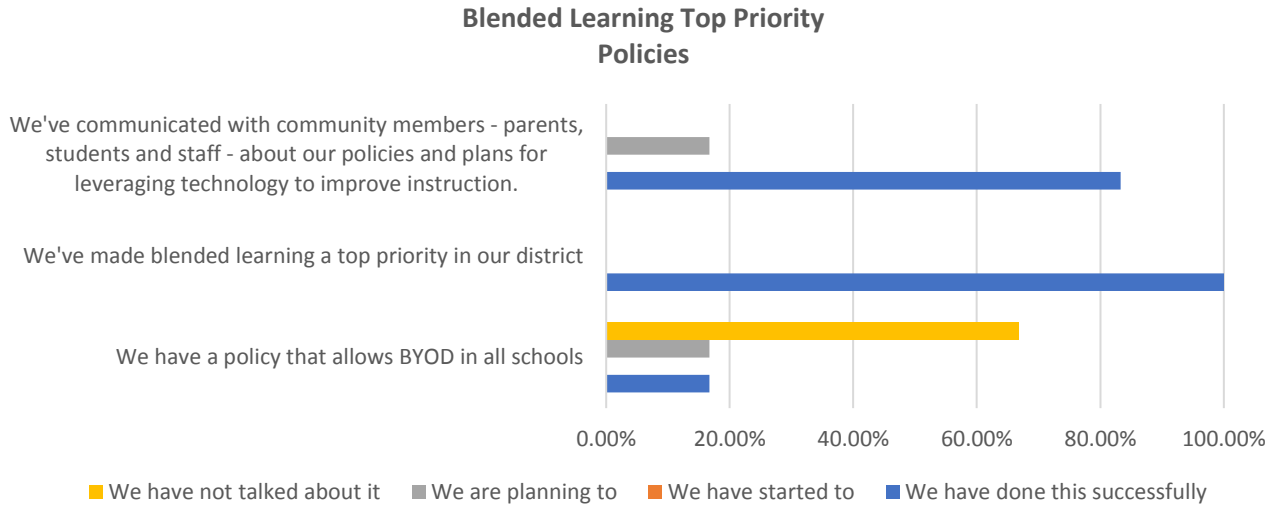

Digital Resources
Students have access to digital textbooks or online resources beyond their physical textbook.
Students have the opportunity to take supplemental online courses beyond the courses offered in school.
Students can easily access class learning content online (for example, if they miss class).
0.0% 10.0% 20.0% 30.0% 40.0% 50.0% 60.0%
No students
Few students
Most students
All students

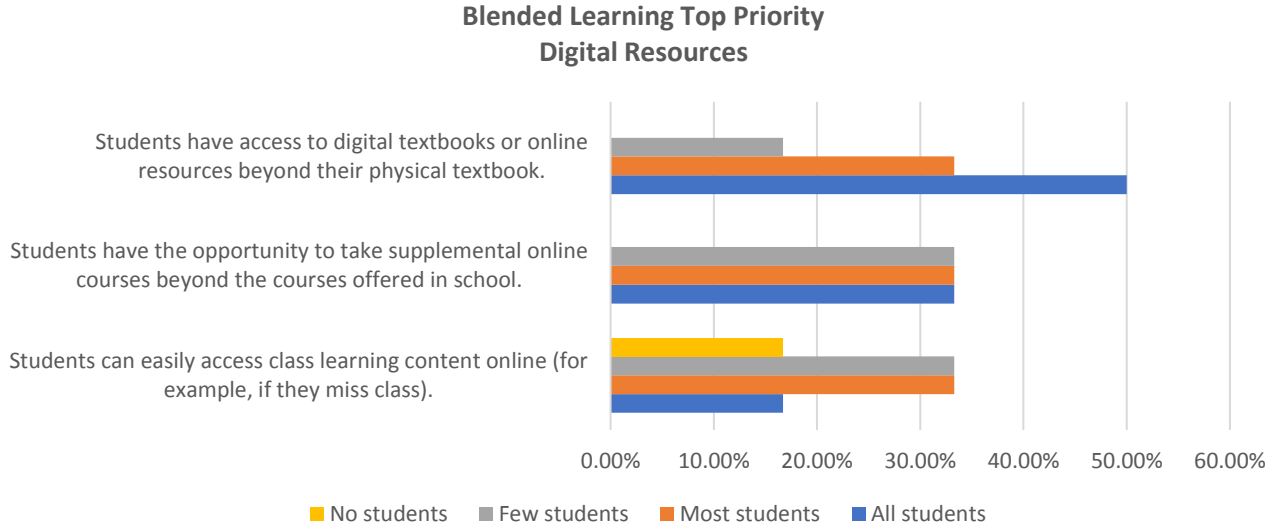


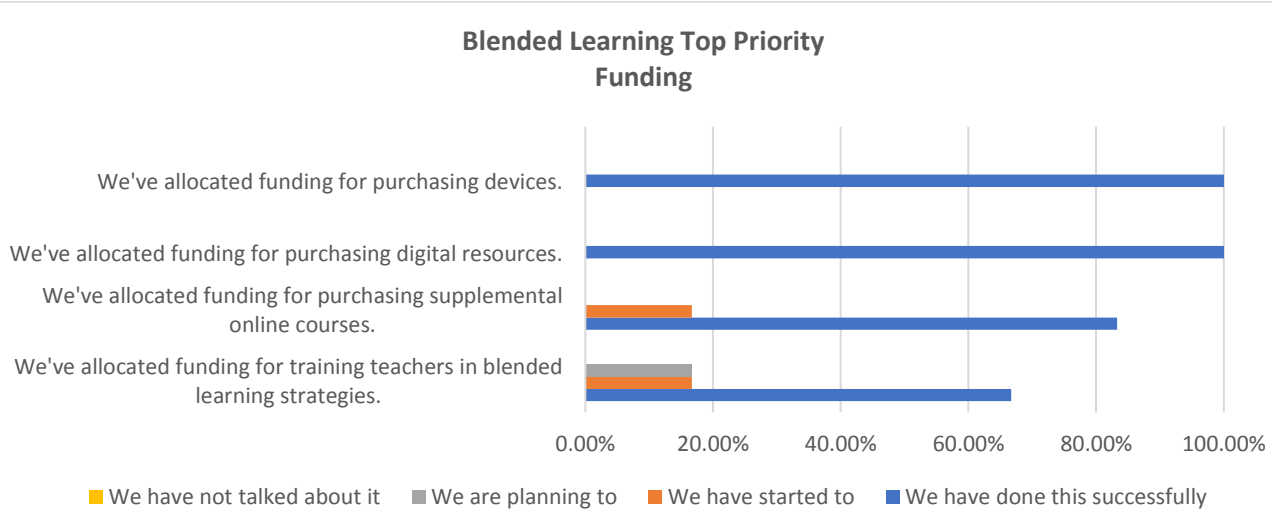
Blended Learning as a Top Priority

There were six district leaders who indicated their schools have made blended learning a top priority. Their responses to the same questions yielded different results, showing where they have placed priorities in implementing blended learning strategies. Notably, they indicate more teachers have been trained in blended learning strategies and have opportunities to learn about and experiment with blended strategies. Communication to the community about using technology in learning has also been completed by most of these districts and funding has been allocated by all these districts for purchasing digital resources and devices. However, their access to digital resources is similar with all other districts whether or not they have made blended learning a top priority.



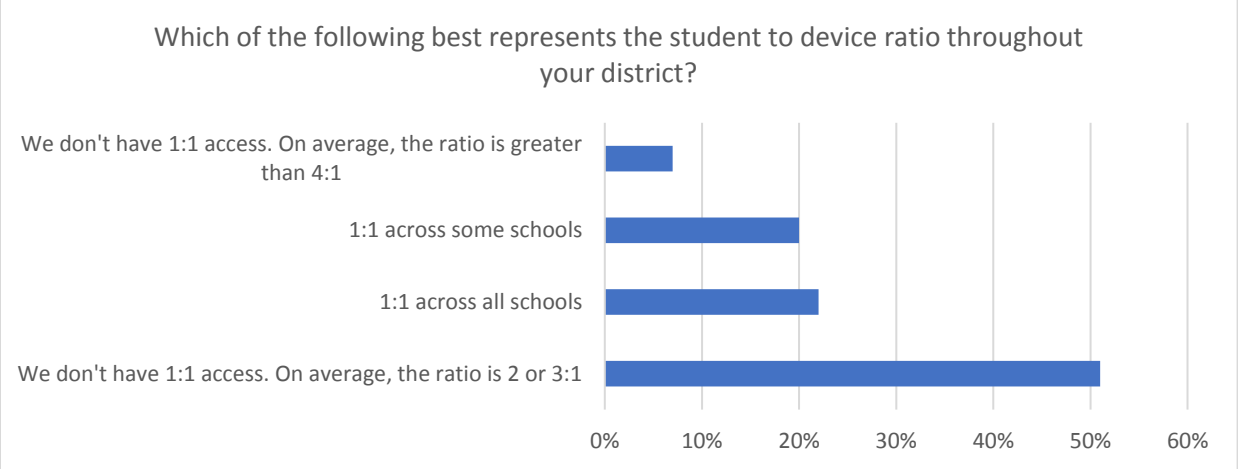

Blended Learning Top Priority Policies
We've communicated with community members - parents, students and staff - about our policies and plans for leveraging technology to improve instruction.
We've made blended learning a top priority in our district
We have a policy that allows BYOD in all schools
0.00%
20.00%
40.00%
60.00%
80.00%
100.00%
We have not talked about it
We are planning to
We have started to
We have done this successfully

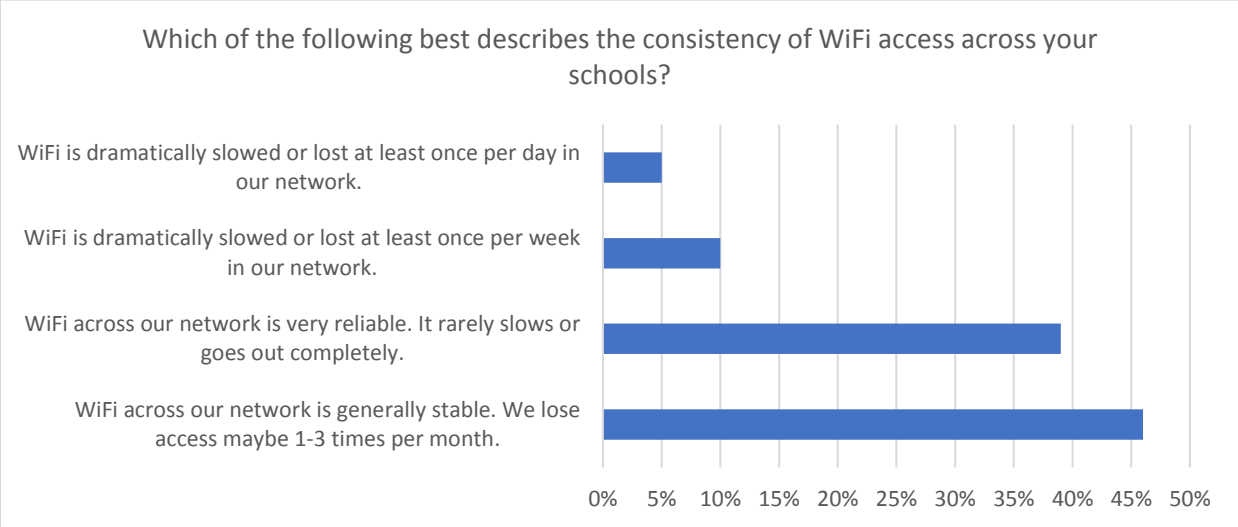

Blended Learning Top Priority Digital Resources
Students have access to digital textbooks or online resources beyond their physical textbook.
Students have the opportunity to take supplemental online courses beyond the courses offered in school.
Students can easily access class learning content online (for example, if they miss class).
0.00%
10.00%
20.00%
30.00%
40.00%
50.00%
60.00%
No students
Few students
Most students
All students

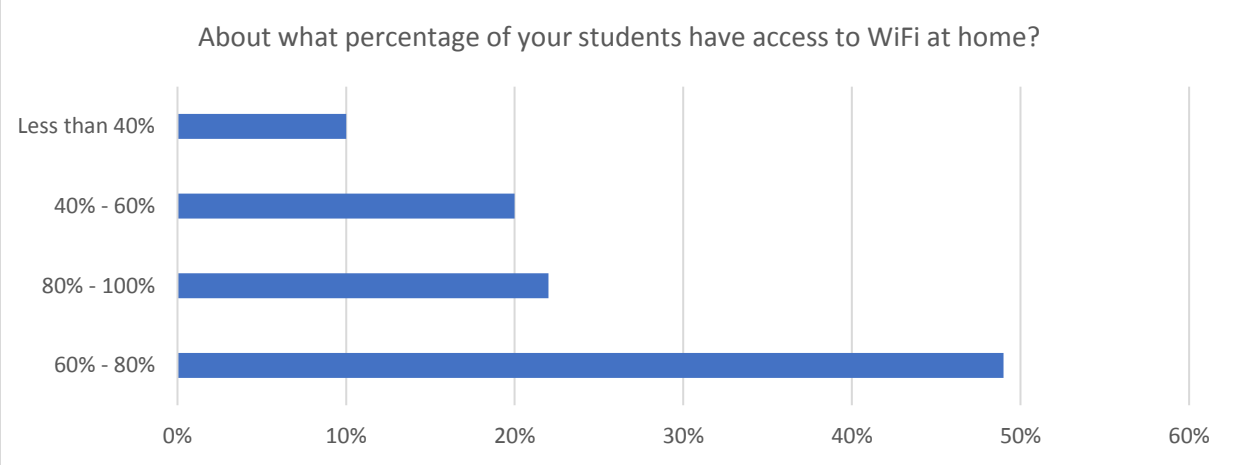

Blended Learning Top Priority Funding
We've allocated funding for purchasing devices.
We've allocated funding for purchasing digital resources.
We've allocated funding for purchasing supplemental online courses.
We've allocated funding for training teachers in blended learning strategies.
0.00%
20.00%
40.00%
60.00%
80.00%
100.00%
We have not talked about it
We are planning to
We have started to
We have done this successfully

Hardware and WiFi Access

Additionally, district leaders answered questions on hardware and WiFi access for students within their districts. The following charts indicate that the majority of students in districts that responded have at least a 2 or 3 to 1 ratio of hardware; internet access is generally reliable at the majority of schools; and a majority of students likely have access to WiFi in their homes.







MEETING DISCUSSION

During the statewide outreach meetings participants spent most of their time discussing and expanding on the questions from the survey polls. The discussion was facilitated by Keystone and focused on the role of blended learning in contributing to Colorado's education vision, what about blended learning is currently working well in schools and districts, where there are barriers or challenges to blended learning, and what priorities should be addressed in the state roadmap.

Consistent themes from the vision discussion highlighted blended learning's ability to promote equity in education across the state, flexibility to meet student needs, and provide personalized learning. Blended learning promotes equity by providing an avenue for students to access the same courses and lessons regardless of their location or income status. The theme of equity was especially pronounced in more rural areas of the state. Blended learning provides personalization and flexibility for students in its ability to address different needs and accommodate different learning styles on an individual basis. Meeting participants also emphasized the fact that blended models reflect the way students are currently learning and accessing information on their own and the education system needs to adapt to these changing patterns in technology.

Common barriers and challenges heard during the discussions focused on human capital, seat time policies, community and leader engagement, culture and internet access. With regards to human capital, the conversations focused mostly on professional development of teachers. It was often mentioned that teachers were not prepared to teach in a blended environment, they did not have the necessary skills to use technology, they did not know how to manage online content and teacher preparation courses do not provide training in blended methods. Seat time policies were called out as a barrier because they are incompatible with competency based learning, districts are used to funding based on policies like the October count, and are required for graduation guidelines. It was also noted in both urban and rural areas, that student access to internet outside of the school building is a barrier to implementing blended learning. Students need reliable access to internet outside of the school in order to access online content outside the classroom. Finally, it was noted in many meetings that a large barrier to moving towards blended models is that these methods require a large culture shift from how education has traditionally been delivered which causes apprehension and uncertainty from parents and teachers who are weary of a new mode of teaching.

Similar to the barriers, the main priorities meeting participants would like to see addressed in the Roadmap focused on human capital and professional development, addressing policies like seat time requirements, creating leadership buy-in, strong messaging and communication about blended learning and securing additional funding to implement blended learning. Discussion on priorities was dominated by a focus on investing in professional development for teachers to make sure they have the necessary skills to successfully teach in a blended environment. Participants wanted to see seat time policies addressed so the implementation of blended learning would align better with funding models. Finally, creating strong messaging and communication about blended learning was important to participants in garnering more leadership buy-in as well as understanding from the community of what blended learning is and how it can be an effective model of education for students.

CONCLUSION

Consistent themes from both the online survey, meeting polling and discussions were that investments in human capital were a top priority among participants for the roadmap and that funding policies and human capital were large barriers to implementing blended learning. An important investment in human capital includes robust professional development to train teachers in blended learning techniques and to provide familiarity with technology. Funding for blended learning resources and policies around how schools are funded were also central to the discussions and polled highly among participants. Respondents mentioned a need to reanalyze the way school funding is implemented in Colorado and an inconsistency between seat time policies and the desire to move towards personalization and competency based models.

Effective communication and engagement with district leaders, teachers and parents was highlighted as an important theme throughout meeting discussions and polling, especially because there is still confusion over what blended learning is and is not. As the Roadmap moves forward, an important consideration will be effective engagement, communication and feedback as blended learning rolls out in more schools and districts across Colorado; this is especially important in light of the fact that this initial process did not garner as much participation as anticipated despite repeated outreach efforts, there were a few outreach meetings that did not draw attendees and the district leader response rate in the survey was lower than anticipated.

In the end, the consistency of input on barriers and priorities from those that participated as well as the rich discussion that was afforded by the meetings provide strong direction for the Roadmap.

Colorado Blended Learning Roadmap
Appendix D
Blended Learning Trends Assessment: Learnings from other States

Background

As part of its outreach to support Colorado Empowered Learning in the development of the Colorado Blended Learning Roadmap, Keystone Policy Center conducted a trends assessment of blended learning strategies in other states by interviewing seven states on their blended and/or online learning programs. The states chosen for interviews were identified by the Colorado Blended Learning Roadmap Core Team. The interviews took place in February and March 2017 and each interview lasted approximately 45 minutes. Additionally, Keystone conducted research on the online/blended programs of key states identified by the Core Team with whom we were unable to secure interviews.

Sample Interview Questions

- What definition of blended learning do you use?
- What are the most promising blended learning policies, practices or implementation models you have seen?
- How are blended learning programs funded in your state?
- What roadblocks or challenges have you experienced in implementing your program(s)?
- How are you tracking success?
- Are there specific strategies you believe are vital to any blended learning strategy?

Key Takeaways and Recommended Best Practices

The states interviewed had varying degrees of blended and online learning programs. The following are useful key takeaways and recommended best practices that can be applied to the Colorado Roadmap on Blended Learning. The items are categorized within the priority areas considered in the drafting of Colorado's Roadmap. The most common themes from the interviews were related to human capital and communications.

Human Capital

- Effectively communicate what blended learning is and that it is not solely online classes.
- Emphasize the role of the educator in blended learning.
- Communicate early and often with parents and community. Create a solid definition that distinguishes between blended learning and virtual/online learning to avoid confusion.
- To ensure long term growth, there needs to be buy-in and an "all in" attitude from the administration level on down. Blended learning programs tend to work the best in settings where entire teaching teams have opted in to integrating blended learning strategies.
- Online learning is not the right fit for all students, there should be an emphasis in identifying the right students for this type of learning.
- Help students become familiar with blended learning programs by starting small and increasing course offerings year after year.

- Use student ambassadors that have completed blended learning courses and done well as peer tutors for new students to blended courses.
- There is a tendency for others to think that state level programs are a way to monitor school districts and are a requirement for districts to use. Create good relationships with districts and education associations so they understand the goals of the blended learning program.

Digital Resources

- Procurement for platforms and content providers can be very cumbersome and time-consuming at the state level. This should be factored in to avoid losing momentum with teachers and school districts as the program is being rolled out.
- Do not purchase vendor content for courses; build course content specifically for state standards in conjunction with state educators.
- Offer coursework that is limited in rural areas – AP classes, foreign language, etc. – to ensure greater access and equity across the state.

Technology

- Do not let technology drive instruction; instruction should drive technology.

Funding

- Grant and funding incentives can encourage the use of blended leaning in districts. Demonstrate to districts the benefits of blended learning including the use for course recovery, expanding course offerings, help with test prep, college prep, etc.

Policy

- If it is the district's responsibility to provide textbooks, create clear policy to ensure students have access to a textbook if it is required as part of the blended course.
- Provide incentives through teacher pay grid to motivate the use of blended learning strategies.

State Programs Considered in This Assessment

An asterisk (*) indicates the states that were researched online but not interviewed

State	Program	Blended Learning Approach
Arkansas*	Virtual Arkansas	Supplemental education for public school students in AR that provides an array of digital courses to students and licensed instructors.
Kentucky*	Digital Learning	Kentucky developed guidelines through Digital Learning 2020 to ensure digital learning resources, online courses and blended learning courses meet or exceed criteria for high quality traditional instruction.
Louisiana	Supplemental Course Academy	The courses in SCA are individualized to the needs of secondary students and are provided outside of the traditional school. The courses offered are focused on career and technical prep, advanced coursework not available due to limited resources, dual enrollment, and remediation.
Michigan	Michigan Virtual Academy	MVU is a private, non-profit established by the state legislature serving k-12 students with online instructional services. MI uses the Christiansen definition of blended learning.
New Hampshire	New Hampshire Educators Online	NHEON is focused on online education for teachers, providing supplemental coursework and continuing education for educators.
North Carolina	North Carolina Virtual Public School	NCVPS was created by the state legislature and provides high school students with expanded academic options in teacher-led, online courses that are aligned with state curriculum standards. Teachers are all contract employees and there are no full-time students.
Rhode Island*	Virtual Learning	RI uses the Christiansen definition of blended learning. There are several charter schools in the state that have implemented blended learning models that personalize learning for individual students. Students are allowed to show “mastery” of a subject before moving on to the next.
Tennessee	Algebra 1/Integrated Math 1 Learning Pilot	TN began a two-year blended learning pilot for Algebra 1 in July 2016 using the Christiansen model.
Utah	Statewide Online Education Program	Offer supplemental courses that are available to all school districts in UT. Students can take up to 6 courses online per semester which allows for extreme levels of student flexibility.
Virginia	Virtual Virginia	Supplemental course offering program directed mostly for rural areas. The program utilizes live, virtual teachers and offers 72 courses. The state is currently piloting a full-time version of the program.