2021-2024 REL and BLI Variance Waiver Crosswalk

Submitted to:

Dr. Rhonda Haniford, CDE School Quality and Support Associate Commissioner

By:

Mallorie Klemm, Blended Learning Education Sr. Consultant
CDE Schools of Choice Unit, Office of Online and Blended Learning

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Executive Summary

Overview

In Colorado, online education has grown over the past 16 years since the 2007 Online Act (§ 22-30.7-101-113, C.R.S.) was established. Since 2020, COVID-19 has caused many schools in Colorado to shift their instructional models from traditional in-person to remote learning instruction and other types of hybrid models. It has been important to step back and reassess "what works" in terms of instruction, seat time/funding requirements and—fundamentally—achieving strong student outcomes. Such a reassessment has required courage, creativity, and intention to look at what we've learned, how students have been impacted, how education has evolved, and where we go from here.

The Colorado Department of Education (CDE), also referred to as the "Department", established the Blended Learning Initiative (BLI) in 2020 for collective conversations with K-12 education leaders, entities, and stakeholders across school districts and the state. As CDE navigated the rulemaking process with the State Board of Education in 2023 and 2024 to allow more permanent flexibility to school districts and their instructional model, the BLI continued to facilitate the Variance Waiver Process to the posted guidance for related to Blended Learning (BL) and Supplemental Online (SO) Courses - as referenced throughout this report for school years 2021-22, 2022-23, and 2023-24. Additionally, CDE sought out findings and recommendations in 2021 and 2023 from research about blended and online learning in K-12 and several states' policies as they relate to student funding, instruction, attendance, and governance.

Research Scope

In 2021, The Central Regional Educational Laboratory (REL) for the U.S. Department of Education - as administered at the time by Marzano Research was contracted by the CDE to conduct a literature search and systematic evidence review research project on blended and online learning in conjunction with the BLI. Of the 932 identified distance learning studies identified by REL, 35 were eligible for review. In 2022, the CDE Office of Online and Blended Learning (OBL) synthesized feedback from Colorado school districts and schools implementing online and blended learning models during the 2021-2022 and 2022-2023 school years. This REL and BLI Crosswalk Report reflects a side-by-side comparison of the 2021 literature findings from REL Central and 2021-2023 feedback from the BLI's variance waiver to highlight blended and online learning practices in Colorado that align with key research.

In 2023 in consultation with REL, CDE collaborated with the Region 12 Comprehensive Center for an updated literature research review of blended and online learning practices. As no additional, updated research was found by Region 12 Comprehensive Center this crosswalk reflects only REL's findings.

Introduction

REL Literature Review

While statewide policies and practices are well established for full-time online schools and full-time brick and mortar schools, the growing use of flexible learning in traditional schools (for example: hybrid learning, blended learning, supplemental online, and COVID-related fully remote learning) provide little data available to the Department on which types and styles of flexible instruction are best for student outcomes. Therefore, the Department sought the expertise of REL Central to conduct a research scan of national literature available for blended and online learning.

REL Central supported CDE with research to expand understanding by:
1. Investigating which remote/online instructional models and blended models support positive outcomes for students,
2. Identifying how other states are funding students in remote, blended and online learning environments, and
3. Identifying how other states determine full or part time funding eligibility for students.

The literature review prioritized finding information related to remote/online and blended learning instructional models and policies. For the research review, REL looked through studies vetted through the *What Works Clearinghouse* to find strategies that are associated with positive and/or negative student outcomes. As disclosed by REL Central, the search for literature was not comprehensive and other relevant resources may exist - particularly as it is an evolving topic getting greater research attention in the COVID/post-COVID era.

From a synthesis of the literature provided by REL Central, the following themes emerged to best organize the research gathered: Enrollment, Accessibility, Learning Models, Instructional Models, Student Achievement, Family Support, and Professional Development. These themes present best practices for student outcomes in blended and online learning settings. In the crosswalk tables throughout this report, the REL information is presented in separate tables for each of the themes. Within each theme's table, specific findings from the research are compared with feedback from Colorado school districts in the waiver documents. The specific findings are presented in individual rows within the tables.

Those viewing the crosswalk comparison of the REL findings and the BLI waiver information should observe how the flexible instructional models of the school districts using the waiver during the 2021-22, 2022-23, and/or 2023-24 school year(s) aligns with the best practices for Enrollment, Accessibility, Learning Models, Instructional Models, Student Achievement, Family Support, and Professional Development within the research.

BLI Variance Waiver

The BLI facilitated robust policy and best practices conversations from 2021-2024 to understand more about blended and online learning models in Colorado school districts. These discussions particularly targeted Colorado school districts and schools implementing flexible learning models that fell outside CDE's posted guidance related to Blended Learning (BL) and Supplemental Online (SO) courses as an acceptable form of learning for all students per subsequent statute (22-5-119, C.R.S.). All school districts and schools were eligible for a formal variance waiver to the guidance for the 2021-2022, 2022-2023, and 2023-2024 school years.

The waiver allowed participating school districts and schools to waive one and/or two course requirements in the posted [Student October Count Audit Resource Guide](#) for each applicable school year from CDE's School Auditing Office. While school districts and schools must abide by the other course requirements, the two requirements eligible to waive for full-time funding through the waiver were:

- Course Requirement (#1): **Total number of courses:** The number of Blended Learning and/or Supplemental Online courses that may be considered as instructional time for funding purposes is limited to no more than 2 courses or 40% of a student's total schedule.
- Course Requirement (#3): **Amount of Instruction:** At least 20% of a student's weekly scheduled instructional time in Blended Learning and/or Supplemental Online courses must take place in person or synchronously, with attendance taken.

In order to participate in the variance waiver process, each Colorado school district and school completed and submitted two forms to CDE for each school year(s) they utilized the waiver:

- **Data Form**
  - General Data - District Code, District Name, Requestor Information, SASID for all students reported in Student October 2021 participating in an Instructional Model listed
  - General Questions - Some of the questions asked in this form included:
    - *Does the instructional model require that student **exceed the limits** on the number of blended learning and/or supplemental online courses allowed for funding purposes per the posted guidance (Course Requirement #1)?*
    - *Does the instructional model provide for **less than the minimum** amount of in-person or synchronous instruction (20%) per course described in the posted guidance (Course Requirement #3)?*
    - *Does the model incorporate **supplemental online** courses?*
    - *Does the model incorporate **blended learning** courses? (A student attending in-person and online/remote for the same course)*
    - *Does the model incorporate traditional in-person on-site courses?*

- **Narrative Answer Form**
  - General Data - Schools using this Instructional Model, Any (non-school) programs using this Instructional Model
  - General Questions - All of the questions asked in this form included:
    - *Describe <u>in detail</u> the instructional model that you are providing that involves blended learning and/or supplemental online activities for brick-and-mortar students falling outside of the posted guidance (i.e., number of courses and/or synchronous/in-person instruction).*
    - *How are courses in this model being staffed?*
    - *What is the target student population for this learning model?*
    - *Explain the student needs that this model meets.*
    - *What is the problem that this instructional model is anticipated to solve for students?*
    - *Do you have any data/evidence indicating that this instructional model will be effective? If so, please describe (and include citations, if available).*
    - *What other options have you explored? Are there other ways to meet the identified student needs that might fall within the parameters of the posted guidance?*
    - *Outline how the proposed plan provides students equitable access to the blended learning and/or supplemental online courses, including but not limited to how the plan provides improved access to learning opportunities for students.*

Given the length and varying formats of the Data Form spreadsheet and Narrative Form document, both have been added as images within this report. Accessible versions of these forms are available upon request to blendedlearning@cde.state.co.us if those viewing this report prefer access to the spreadsheet and/or document forms.

Below are images of the Data Form document and Narrative Answer Form spreadsheets required to be completed by all participating school districts and schools in the variance waiver process:

Data Form (Questions tab)

Formal Variance Waiver Request Data Form — COLORADO Department of Education

INSTRUCTIONS

For high-level instructions on using this form, including definitions, see the "Formal Variance Waiver instructions" document that was posted in the same Syncplicity folder.

1) Fill out **all yellow boxes** on this form, both in the General section and for each Instructional Model that have aspects that fall outside of the posted Blended Learning and/or Supplemental Online course guidance for funding.
2) Fill out a separate **"Formal Variance Waiver Narrative Form"** (Word document) for every Instructional Model identified on this form.
3) List all students reported in Student October 2021 who were participating in an Instructional Model identified on this form on the yellow **"Student Data" tab** (below).
4) Re-upload all completed forms to **Syncplicity**

Required
(To Obtain Benefit)
FORM # SOC-108
EDAC APPROVED
Approved 11/05/2021 for 2021-2022

GENERAL

District Code	
District Name	
Submission Type	
Requestor Last Name	
Requestor First Name	
Requestor Job Title	
Requestor Email	
Requestor Phone Number	
How many different types of instructional models has the district or school implemented that have aspects that fall outside of the posted Blended Learning and/or Supplemental Online course guidance for funding?	

Instructional Model 1

Is this instructional model designed to serve a unique student type as described in the Student October Audit Resource Guide?	
Does the instructional model require that students **exceed the limits** on the number of blended learning and/or supplemental online courses allowed for funding purposes per the posted guidance (Course Requirement #1)?	Yes/No
Does the instructional model provide for **less than the minimum** amount of in-person or synchronous instruction (20%) per course described in the posted guidance (Course Requirement #3)?	Yes/No
Does the model incorporate **supplemental online** courses?	Yes/No
Does the model incorporate **blended learning** courses? (A student attending both in-person and online/remote for the same course)	Yes/No
Does the model incorporate traditional in-person on-site courses?	Yes/No

Questions	Student Data	+

Data Form (Student Data tab)

Formal Variance Waiver Request Student Data

COLORADO
Department of Education

INSTRUCTIONS FOR THIS TAB

1) Complete the green **"Questions" tab** of this worksheet.

2) Enter **School Code and SASID for all students** reported in Student October 2021 who were participating in an Instructional Model listed on the "Questions" tab.

3) Enter the **Instructional Model #** in which each student participated, as listed on the "Questions" tab.

CDE School Code	SASID	Instructional Model #			

Questions | **Student Data** | +

Narrative Answer Form

**Formal Variance Waiver Request
Narrative Answer Form**

COLORADO
Department of Education

Your district or school requested and was granted a variance waiver to the posted funding guidance for brick-and-mortar students taking blended learning and/or supplemental online courses during the 2021-2022 and 2022-2023 school years. Answer the following questions by typing or pasting your response to each of the 8 questions below.

For high-level instructions on using this form (including definitions), see the "Formal Variance Waiver instructions" document that was posted in the same folder.

1) Download the Narrative Answer Form and **complete a separate form for each instructional model** your district identified on the Formal Variance Waiver Request Data Form (Excel form).
2) Re-upload all completed Data and Narrative forms into the "Completed Forms" subfolder inside the Syncplicity folder where you found the templates.

District Name:	
District Code:	
Instructional Model Number (Per the Formal Variance Waiver Request Data Form):	

List any schools using this Instructional Model:	
List any (non-school) programs using this Instructional Model:	
Additional school or program contact information (optional):	

1) Describe in detail the instructional model that you are providing that involves blended learning and/or supplemental online activities for brick-and-mortar students falling outside of the posted guidance (i.e., number of courses and/or synchronous/in-person instruction).

[Type or paste your answer here.]

2) How are courses in this model being staffed?

[Type or paste your answer here.]

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3) What is the target student population for this learning model?

[Type or paste your answer here.]

4) Explain the student needs that this model meets.

[Type or paste your answer here.]

5) What is the problem that this instructional model is anticipated to solve for students?

[Type or paste your answer here.]

6) Do you have any data/evidence indicating that this instructional model will be effective? If so, please describe (and include citations, if available).

[Type or paste your answer here.]

7) What other options have you explored? Are there other ways to meet the identified student needs that might fall within the parameters of the posted guidance?

[Type or paste your answer here.]

8) Outline how the proposed plan provides students equitable access to the blended learning and/or supplemental online courses, including but not limited to how the plan provides improved access to learning opportunities for students.

[Type or paste your answer here.]

According to the feedback provided by Colorado school districts and schools that sought variance waivers through the BLI from 2021-2024, the following primary reasons were reported for why flexible instructional models through blended and online learning were utilized: health concerns (in-person concerns per COVID-19, risk for contracting COVID-19, student health issues, parent health issues), at-risk factors (Title 1, Credit Recovery, General Education Diploma, Expulsion, legal system, detention center), special populations (Special Education, Section 504, ELL, Health Plan), intervention (Multi-Tiered System of Supports, Read Plan), advanced academics (Advanced Learning Plan, Gifted and Talented, Advanced Placement, enrichment, postsecondary, Career and Technical Education), community engagement (internships, work-based, project based, Alternative Education Campus, fellowships, elite athletics, performing arts), and barriers (limited district staffing, enrollment capacity, rural limitations, inequitable access, economically disadvantaged, homeless, transportation, family financial support, family location, chronic absenteeism, truant, drop-out, migrant). Other reasons reported include: educational benefits, instructional flexibility, self-paced environment, personal reasons, religious reasons, student needs, student interests, student safety, and other unique situations. Additionally, the instructional models from school districts and schools utilizing the three-year waiver were reported to service a full-range of K-12 students at the elementary school, middle school, and high school levels.

Crosswalk Tables

A crosswalk comparison of the synthesized feedback from the 2021-2024 Data Forms and Narrative Answer Forms (right-hand "BLI" column references the summarized variance waiver process forms as a part of the BLI) and the synthesized research literature provided by REL Central (left-hand column includes paraphrased statements from the research literature) is reflected in the tables below.

The purpose of these crosswalk tables is to provide a side-by-side comparison of the 2021 research literature findings from REL (*What does the research say?)* and the waiver form feedback from Colorado K-12 school districts and schools participating in the BLI waiver during school years from 2021-2024 (*Does what school districts and schools report for their blended and online instructional models align with the research?*). The comparison indicates the alignment of practices between the research literature and blended and online learning models offered throughout Colorado.

When referencing the tables below, please note:
- The following themes were identified from the REL and BLI findings to divide out into separate tables per theme: Enrollment, Accessibility, Learning Models, Instructional Models, Student Achievement, Family Support, Professional Development
- The intended review of the tables is to observe reported practices of Colorado school districts and schools using the BLI waiver alongside similar best practices and finds from the REL research literature.

Enrollment	
REL Central (Research Literature)	**BLI (Formal Variance Waiver Forms)**
Students enrolling in online schools might have **academic, social, or behavioral problems** that contribute to their future performance (Woodworth et al., 2015).	Prepare for students' **academic success** ● Evaluate each student's learning barriers for placement ● Develop personalized student learning plans and course schedules with families ● Student access to highly diverse course catalogs ● Assign courses in collaboration with the student ● Individualize schedule to meet their needs and goals ● Take courses for course completion of a fulltime student ● Create and communicate weekly student schedules ● Provide students structure, coaching, tutoring, and accountability ● Provide both synchronous and asynchronous learning opportunities Prepare for students' **social success** ● Promote student engagement through involvement in educational process ● Offer social and emotional programming ● Offer social and emotional services and supports ● Provide students relationships ● Communicate with students ● Participate and attend school events and extracurriculars ● Promote student autonomy and independence Prepare for students' **behavioral success** ● Build rapport and relationships with families ● Maintain a personal, positive connection for education success ● Establish goals through goal-setting with students ● Enhance executive functioning skills necessary for student success
Students who have **worse academic performance and worse attendance** are more likely to switch to a virtual school from a brick-and-mortar school (Bueno, 2020).	Identify the type of students to anticipate **successful performance** needs ● Unique Student Type (Expelled, Homebound, Home-school, High School Equivalency, Transition or Sped, Other, None) ● Provide intervention to school groups to learn, re-learn, reflect on, and gain deeper understanding of content Prepare students for **successful attendance** ● Follow the minimum hours for course completion of a fulltime student ● Create a plan with the student to ensure attendance requirements for learning

	Monitor student engagement ● Take attendance to document student engagement ● Take mandatory virtual attendance daily ● Ensure students are enrolled and engaged in courses ● Facilitate daily, weekly, monthly, and annual accountability meetings
Students who have been identified at any point as **special education, limited, English proficiency, migrant, homeless or free/reduced-price lunch** are more likely to switch to a virtual school from a brick- and-mortar school (Bueno, 2020).	Support and service **Special Populations** of students ● All service hours for students with IEPs ● Asynchronous time for Special Ed services for IEP minutes only ● Synchronous learning available for Special Ed services only ● Special Education services online ● Teacher-led videos, interactive media, and text to provide instruction addressing multiple learning modalities

Accessibility	
REL Central (Research Literature)	**BLI (Formal Variance Waiver Forms)**
Ensure that students have Internet-enabled **devices** and adequate Internet **connectivity** to access course materials and to interact with teachers and classmates (Chandra et al., 2020; Haselhorst, 2017; Johnston et al., 2005; Lynch & Kim, 2017; Whiteside, 2013).	Provide devices and connectivity ● Computer/laptop/Chromebook ● Headphones ● Local hotspot/internet access ● Student-issued technology hardware
	Identify which digital platforms will best serve the learning model(s) ● Internal tools (LMS platform, PowerSchool, Google Classrooms, Google Meet, Microsoft Teams, Zoom, email, phone, text, etc.) ● External tools (Google Classroom, Schoology, Edustar, Learning Board, MashMe, StepMojo, APEX Classrooms, Infinite Campus, Alma, GoGuardian, etc.)
	Set-up a space for blended and online learning ● Have a remote learning lab with computers ● Confirm access to courses ● Access to online learning platform (LMS) ● Access all written and audio course materials, videos, notes, assignments, course discussions

Create an **IT position** (group of people) whose sole responsibility is to support tech needs for students, families, and teachers (Chandra et al., 2020; Haselhorst, 2017; Johnston et al., 2005; Lynch & Kim, 2017; Whiteside, 2013).	Provide troubleshooting ● Help with technical issues
Provide explicit **resources about technology use**; be accessible when families and teachers need troubleshooting (Chandra et al., 2020; Haselhorst, 2017; Johnston et al., 2005; Lynch & Kim, 2017; Whiteside, 2013).	Support families with technology ● Assist with internet and computer as needed ● Training in proper use of LMS ● Manage, monitor, and support students as they progress through digital courses

Learning Models	
REL Central (Research Literature)	**BLI (Formal Variance Waiver Forms)**
Blended learning (online and face-to-face) was associated with **greater effects** than online-only learning for K–12 and higher education students (Means et al., 2010, 2013).	Determine learning and instructional model(s) ● Make instructional design decisions ● Differentiate based on elementary or secondary level ● Determine if courses will be accessible anywhere, anytime ● Have students set-up schedules online with teachers ● Prepare lessons and assignments
	Select curriculum and courses ● Online curriculum aligned to in-person course offerings ● Create curriculum ● Identify third-party curriculum and platform ● Uniquely chosen homeschool curriculum ● Core classes and elective classes ● High school and credit recovery courses and electives ● Career and technical education courses ● Build course offerings based on learning outcomes ● Mobile-friendly, or optimized for mobile devices, courses
	Provide advanced academic learning options ● College prep courses to meet graduation requirements ● Post-secondary studies ● Concurrent enrollment classes at local community college

	- College-level research - Weekly small group/cohort enrichment class - NCAA-approved curriculum
	Provide community-based options for learning - Flagship enrichment program - Paid internships - Work-based learning opportunities, work experiences - Work study - Real-world learning - Outdoor education
Collaborative or instructor-directed instruction were associated with greater effects than independent active online learning for K–12 and higher education students (Means et al., 2010, 2013).	Prepare instruction to deliver to students - Course projects, quizzes, tests, and other assessments - Pre-record lesson tutorial guidance videos for weekly learning to provide students - Develop rubrics for work - Co-created project-based learning
	Deliver instructional materials to students - Provide books and curriculum workbooks for each subject/course (Fuel Education, - Colorado Digital Learning Solutions, dual credit college classes, Apex, Aztec, Kaplan GED Prep, Edgenuity, IXL, GradPoint, SEL's Base curriculum, Cross-disciplinary Waldorf Main Lesson courses, Pearson Connexus, PLP Online Curriculum, Colorado Talent Pipeline Report Essential Skills, My Colorado Journey Assessments, Stride Learning, Canvas, Wonders, Scholastic, Edmentum, GED Flash, GED Practice, Accelerate Education, CNCC online courses, ALEKS courses, BYU Credit Recovery, and other "vetted curriculum resources and courses") - Synchronous activities outlined on Learning Board - Provide curriculum and lesson plans to each student - Virtual coursework and take-home assignments
	Supervise blended and remote learning students Monitor time spent in learning platform
	Provide intervention to students - Provide early intervention - Provide advisory and targeted intervention - On-demand live tutors

Instructional Models	
REL Central (Research Literature)	**BLI (Formal Variance Waiver Forms)**
Middle and high schools with **smaller average class sizes** had greater reading and math achievement (Woodworth et al., 2015).	Identify blended learning and supplemental online staff ● Available school district staff (Core Content Teacher, Licensed General Educator, Instructional Staff, Administrator, School Counselor, Paraprofessional, Academic Advisor, Success Coach, Program Lead or Coordinator, Coordinator, Enrichment Teacher, Special Education Teacher, Social Worker, Mental Health Provider, Special Services Provider, Tutor, Support Staff, School Nurse, Librarian, Registrar, Parent and Learner Advocate, Grant Student Support Partner, etc.) ● Available external staff (CDLS Staff, Next GED Instructional Staff, Concept Coach On Demand Tutor, SSSD Online Mentor, Live Tutors, Community Partners, Stride Learning Instructors, SWC eSchool Staff, etc.) ● Preparation to teach courses and support the program ● Staffing to provide small group tutoring and intervention sessions
	Utilize external providers ● Receive communication update from (CDLS) teachers on student progress
Schools that did not **formally monitor the interactions between teachers and families** saw less math academic growth compared to schools that had a school administrator, lead teacher, or other staff member monitor the interactions (Woodworth et al., 2015).	Establish contact requirements ● Document instruction time and interactions ● Require immediate response times per communication guidelines
Students in blended learning environments, where they had the **opportunity to interact with peers and teachers**, performed significantly better on factual knowledge than those in the online learning environment (Chen, 2012).	Make in-person contact with students ● Meet with students in-person on campus (1) ● Daily morning meeting for social time and to address social-emotional needs
	Make virtual contact with students ● Create designated daily or weekly office hours to reach out ● Schedule weekly status check-ins (Microsoft Teams) ● Make weekly outeaches (phone calls, emails, Google Meet) ● Require contact for 1:1 support
	Provide peer-to-peer interaction ● Daily guided content with other students ● Social activities ● Maintain peer relationships on campus for half of classes

	Support students - Reinstruction as needed - Ability to access teacher assistance during assigned class periods - Offer alternative times for support (lunchtime, recess, transition times, evenings, after hours) - Complete a needs assessment to determine student needs - Support students with study skills, time management, and other skills to be successful online
Students taking the **online** algebra course had **higher** general math **achievement and more advanced course-taking** than students who took regular grade 8 courses that taught algebra content (Heppen et al., 2011).	Monitor student progress in courses - Document student work - Review and grade student work - Ensure students complete all of curriculum through progress monitoring - Reassign work until program expectations are met - Post and report weekly grades in the SIS/LMS - Daily student check-ins via in-person, email, text, or phone communication - Check grades
	Communicate about student progress in courses - Immediate, individualized feedback on assignments - Hold students accountable for work completion - Contact parents about student progress - Progress reports with information on student progress - Communicate with families if students are struggling
	Ensure student proficiency - Provide district instruction in skills necessary for success in courses - Guide students - Respond to student needs for personalized instruction - Provide academic support during instructional time - Routinely check for understanding and mastery - Measure competencies - Teacher with each student to ensure academic success
Determine if synchronous, asynchronous, or a combination of both is **most feasible**. **Make clear connections** between synchronous and asynchronous activities (Ahn & McEachin, 2017; Carpenter et al., 2015; Chandra et al., 2020; Harris, 2018; Kim et al.,2017; Long & Szabo, 2016; Schubert, 2012; The Learning Accelerator, 2020).	Create individualized plans for students - Determine if blended learning and/or supplemental online learning program and activities - Select curriculum aligned with student individual learning plan - Discuss content and build connections - Classes for graduation requirements - Specialized supports to address student needs in education plans
	Offer in-person synchronous learning

	● Provide in-person instruction ● Offer alternative times for successful sessions (lunchtime, evenings, after hours)
	Offer virtual synchronous learning ● Create a virtual classroom for learning experiences ● Schedule synchronous learning sessions to access teachers and supplemental instruction ● Plan and provide face-to-face (Zoom) class sessions ● Deliver instruction electronically ● Log-on with instructor using technology (Chromebook, headphones) ● Live stream of in-person classes
	Offer virtual asynchronous learning ● Monitor independent, remote work time ● Provide after hours tutoring supports ● Additional instruction and support from the teacher as needed
Limit remote lectures to 10 minutes or less. Use activities that **require students' involvement** (Ahn & McEachin, 2017; Carpenter et al., 2015; Chandra et al., 2020; Harris, 2018; Kim et al.,2017; Long & Szabo, 2016; Schubert, 2012; The Learning Accelerator, 2020).	Determine amount of time required for instruction ● Instruction per day/week (examples: 3 days/week for 1 hour each, 5 days/week for 5 hours daily, 30-60 minutes/week per class) ● Individual or small group instruction 2 days/week for 1 hour each with instructor or tutor ● Half in-person, half online
	Develop interactive activities ● Hands-on experiences ● Story/book audio recordings ● Learning that is engaging ● Use technology (screencasts, voice recordings, voice comments, LMS) to provide feedback and collaborate with students on projects

Student Achievement	
REL Central (Research Literature)	**BLI (Formal Variance Waiver Forms)**
Online learning had **significant positive effects** (two reports; (Sahni et al., 2021 & Means et al., 2010, 2013) on some student achievement outcomes, or found **positive** but not significant **effects** (one report).	Encourage online learning if prepared ● Participation in online program if in good attendance ● Participation in online program if in good engagement standing
Virtual and blended schools received low state performance ratings, with **blended schools receiving slightly better ratings** than virtual schools (Molnar, 2021).	Discuss state-level requirements ● Training in state expectations for online courses
	Select curriculum and materials accordingly ● Academic courses aligned to local and state curricular standard ● Courses following Colorado Standards ● Rigorous CDE standards-aligned curriculum ● Educator designed instructed enrichment content for online environment ● Student preparation for assessments (GED quizzes, practice tests, content area exams)
Schools offering **entirely self-paced courses had stronger growth** in reading compared to schools not offering self-paced courses. (Woodworth et al., 2015).	Determine appropriate pacing per students ● Pace students' schedules ● Self-paced courses ● Ensure students are keeping pace with peers ● Data on student pace to complete work
No differences between online versus in-person achievement outcomes were found through online math course for high school students (Lynch & Kim, 2017).	Offer either in-person and/or virtual options for location of learning ● In-person on campus ● At school in supervised classroom ● Off-campus, not in-person, not physically present ● Fully remote, off-site, online, digitally ● Homebound, home learning environment ● Anywhere as long as they can log on during scheduled hours ● In community, outside of traditional classroom ● Personal space in home environment or separate in-person environment
	Determine if location depends on activity ● In-person for assessments (NWEAs, CMAs, PSAT/SAT, state tests) ● In-person for asynchronous time (1x/week) ● Online lab time to work on assigned independently paced courses ● Educational opportunities outside walls of school

	- In-person with students one day per week for check in - Participate in school activities on campus
Academic achievement and assessed class grades and completion rates were higher for students who took **synchronous classes** versus their peers who took asynchronous (Smalley, 2012).	Deliver synchronous learning - Pre-work sessions - Weekly class sessions on Google Meet
	Deliver asynchronous learning - Independent work time - Finish online course work on own time - Completing academic work, assessments, tests, and exams - Time for studying - Exploring college and career opportunities - Supportive activities - Supplemental courses individualized to student
Use existing resources to support participation in non-classroom activities such as virtual field trips, exploring nature, and scavenger hunts. Have **students lead extracurricular offerings** and then support them with resources and supports to bring ideas to fruition (Barkley, 2010; Harrell & Kotecki, 2015).	Provide non-academic services - Offer college and career readiness programs - Seminar classes weekly for team building - Required in-person for extracurricular (band, choir) activities - Choice of learning opportunities aligned with weekly instructional objectives - Weekly enrichment activities (virtual field trips) that focuser collaboration, hands-on and interactive learning - Educator designed instructed enrichment content for online environment - Virtual classroom learning experiences (wellness session, career days, etc.)

Family Support	
REL Central (Research Literature)	**BLI (Formal Variance Waiver Forms)**
Provide **resources for parents** to help their children learn in a blended environment. Resources may include guidance on using digital platforms, online tutoring solutions, and health and safety tips (Boyd, 2018; Chandra et al., 2020).	Determine parent/guardian involvement in education - Supervise and support learning alongside student - Deliver instruction daily - Homeschooling the student - Pick-up or download instructor-supervised project kits for parent-supervised completion - Document instructional time

	Offer educational support ● In-personal or virtual tutoring ● Email updates ● Provide answers to educational-related question and concerns ● Guide through self-paced at-home learning assignments weekly
Use **multiple modes to keep families informed and connected** with the school (e.g., phone calls, weekly emails, texts, resources, surveys) (Boyd, 2018; Chandra et al., 2020).	Maintain access for families ● Daily contact with students ● Weekly contact with parents about parent concerns ● Available for and work with students and families on a daily basis ● Email communications and phone conversations ● Access administration and teaching staff for clarification
	Establish a contact plan for student progress ● Staff contacts parent if student is disengaged ● Video conferences with parent on work completion
Make explicit connections and partnerships between **community resources and families** (Boyd, 2018; Chandra et al., 2020).	Reinforce school investment with parents and students ● Asynchronous time spent with the family ● Encourage participation in school events, activities, and program
	Provide mental health resources ● Tele-health counseling through partnership with licensed therapists ● Provide counseling supports ● Complete social-emotional checks
Provide virtual office hours for students to interact with teachers and build supportive relationships in blended learning environments (Arguedas, Daradoumis, & Xhafa, 2016; Edwards & Helvie-Mason, 2010; Holland et al., 2020).	Ensure staff are available ● Teacher accessible (email, phone, text, video) daily if needed by parent ● Staff answer calls to ensure open communication ● Optional office hours ● Daily office hours or requested meeting for extra support
Carve out time to support students' needs such as holding virtual meetings, journaling time, video/audio entries, etc. **Assign each teacher** a small number of students to check on individually and meet collectively. Can be coffee clubs, current event check-in, etc. (student-led works best) (Arguedas, Daradoumis, & Xhafa, 2016; Edwards & Helvie-Mason, 2010; Holland et al., 2020).	Determine amount of time for contact with family ● Weekly contact with parents and students

Make spaces safe, open, non defensive, and nonjudgmental (Arguedas, Daradoumis, & Xhafa, 2016; Edwards & Helvie-Mason, 2010; Holland et al., 2020).	Encourage student learning
	    ● Positive reinforcement
	    ● Provide students inspiration
	    ● Motivate students
	Meet individual life needs
	    ● Provide access to childcare center

Professional Development	
REL Central (Research Literature)	**BLI (Formal Variance Waiver Forms)**

Support teachers as they learn how to integrate digital tools and content into their classrooms (Chandra et al., 2020; Shaffer et al., 2015).	Train and support staff
	    ● Professional development training for all educators facilitating online learning
	    ● Training in proper use of LMS and technology
	    ● Provide access to technology for communication with families (LMS, email, phone)

Identify and provide immediate professional development **needs for staff** (Chandra et al., 2020; Shaffer et al., 2015).	Discuss best practices ● Training in current best practices with online teaching and learning
Emphasize **teachers'** unique **strengths**, provide **leadership roles**, and invest in teachers' **success** (Chandra et al., 2020; Shaffer et al., 2015).	Encourage collaboration ● Co-teaching and co-planning times among teachers

Recommendations

The following recommendations were identified in the literature review of research sources from REL. In alignment with the crosswalk tables above, they are organized by the theme groupings (Enrollment, Accessibility, Learning Models, Instructional Models, Student Achievement, Family Support, Professional Development) specific to the State (state government), District (local districts), and School (within districts) levels.

The intended review of the list of recommendations is to consider how best practices from the REL research literature could be applied to effectively support Colorado districts and schools instructional models for blended and online learning.

Enrollment

State

- **Guidance** on best practices with student enrollment and placement (incomplete activity over set amount of days, lack of satisfactory progress) for in-person, blended, and online.
- **Quality control policies** to include annual onboarding, annual orientation, policy framework, performance monitoring, conduct reviews during operation, probation for poor performance, approved curriculum, National Standards for Quality Online Education Programs compliance.
- **Count day** adjustments based on LEA authorization, program approval criteria, length (# of years) of operation approval, total- schools within boundaries, enrollment cap, full-time coursework, part-time coursework, program operation data, academic outcomes data, progress monitoring, student mastery, course credits, resources for schools.
- **Funding schedules** varied by monthly funding per attendance, course fee per subject matter, reimbursement rate (per instruction, data, reporting), data in state SIS, provider payment per course, % of remote instruction time, performance-based.

District

- **Policies** outlining attendance and expectations.
- **Parental requirements** to verify child's activities completed for hours, access online LMS, trained on LMS, trained on online tools, access curriculum, access student's progress, orientation, access to devices, internet access, conferences.

School

- **Non-classroom activities** (field trips, events, etc.) to support participation.
- **Student-lead extracurricular activities** with resources and support.

Accessibility

State

- *No recommendations noted in the reviewed literature resources.*

District

- **Strategies** for supporting and servicing Special Populations
- **Budget** for both devices (hardware) and connectivity (software, internet) for families

School

- **Staff** an individual(s) specialized in IT to provide tech support and troubleshooting

Learning Models

State

- **Examine** schools, programs, and models based on:
  - **Type -** condition, full curriculum, supplemental
  - **Teacher -** type of interaction, feedback provided
  - **Student -** personalization, learning experience, time on task, opportunity to practice
  - **Instruction -** pedagogy, content coverage, computer-based instruction elements, face-to-face opportunities
  - **Tools -** gamification, computer mediated communication, media features, one-way video or audio
- **Blended learning expectations** including consistent requirements (funding, performance, accountability) for all students, lack of alternative funding models, board outlines learning model, board outlines progress monitoring, board outlines awarding credits, model must allow mastery, additional teacher preparation time, timeframe to report outcomes
- **Define attendance** by % of instructional activities, # of instructional activities, amount of synchronous instruction, on-time course completion, completion progress (units, lessons, assignments), time spent on computer (per quarter or school year)
- **School classification** varied by alternative instructional time models, define instruction (time and hours), reallocate instruction among courses, attendance taking, instruction delivery, classification per % of instruction location, % of student population, digital learning for all without provisions, review both semesters

District

- **Cap** average class size and less students per teacher for at least reading and mathematics courses
- **Support schools** with spaces that are safe, open, non defensive, and non judgemental

School

- **Accessible resources** about technology use for educators and families
- **Office hours** and time for students to interact and build relationships (meetings, clubs, check-ins)

Instructional Models

State

- **Best practices** for instructional activities (certified teacher, online curriculum, online programs, offline activities, assignments, assessments, student mastery, testing, meetings with school, documented contact, field trips, orientation)

District

- **Expectations** for synchronous, asynchronous, or a combination of instruction for students

School

- **Clear connections** and synchronous, asynchronous, or a combination of instruction for students
- **Student involvement** requirements for instruction sessions
- **Self-pacing time** and coursework specific to student abilities and growth

Student Achievement

State

- *No recommendations noted in the reviewed literature resources.*

District

- **Data collection and monitoring** per school on achievement outcomes

School

- **Plans or contracts** for student academic, social, and behavior performance
- **Data collection and monitoring** per student on achievement outcomes

Family Support

State

- *No recommendations noted in the reviewed literature resources.*

District

- **Resources and guidance** for parents to help their children (using digital platforms, tutoring solutions, health and safety tips, etc.)
- **Partnerships** between community resources and families

School

- **Monitor, promote, and require** interaction between teachers and families
- **Social-emotional support** to address motivation and distractions

Professional Development

State
- *No recommendations noted in the reviewed literature resources.*

District
- **Train** teachers with digital tools and content for their classroom
- **Professional development** to address needs for staff
- **Identify and provide** strong teachers with leadership roles

School
- *No recommendations noted in the reviewed literature resources.*

Additional Recommendations

In addition to the Recommendations above, the REL Central made the following conclusions regarding infrastructure, instruction, student support, and parent supports for successful blended and online learning. These recommendations were used during the 2021-2024 years of the Blended Learning Initiative to drive BLI activities and propose recommendations to the Rules for the Administration of the Public School Finance Act (1 CCR 301-39):

- Teachers likely need to learn how to integrate digital tools and content into their classrooms.
- Synchronous learning can be beneficial in providing real-time engagement, attention, and support between students and teachers.
- Asynchronous learning can be beneficial in providing student access, flexibility, convenience, and personalization.
- Students, especially high school students, may have less motivation and more distractions in blended learning environments and therefore need additional social-emotional learning support.
- Students and families may benefit from technology support that helps them understand how to use the internet, their devices, and the platforms used for blended learning.
- Parents need adequate resources to help their children learn in a blended learning environment.
- Regular communication between teachers and parents may encourage parent involvement in their students' learning. Parents should understand the learning expectations for students, receive real-time communications from teachers, and engage in their students' learning.
- State to define attendance (instructional activities, student completion, withdrawal), funding schedules (pre-pupil funding, SEA report on student progress, authority to discontinue enrollment), and school classification (alternative instructional models, instructional time, effects on funding, permitted amount of virtual instruction, rate of state per-pupil funding, school or district student population, guidance for attendance).

Additional Data Sources

According to the 2021-2022, 2022-2023, and 2023-2024 feedback from Colorado districts and schools in the BLI waiver forms, the following data sources were reported for why flexible instructional models through the variance waivers would be successful through use of CDE's variance waiver: International Center for Leadership in Education, Center for Excellence in Teaching and Learning, Journal of Innovation & Knowledge (JIK), DAN Institute, National Home Education Research Institute, U.S. Census Bureau, U.S. Department of Education, U.S. Census Bureau, Colorado Department of Education, Colorado General Assembly, Individuals with Disabilities Education Act (IDEA), and other national surveys, studies, scholarly articles, and scholarly journals from research institutions and centers. Districts and schools also cited local data on: longevity of program, past student enrollment and program completion, past student success, academic data (academic growth, benchmark data, achievement data, passing grades, course and credit completion, graduation rates, PSAT and SAT scores), attendance data, engagement data (time spent, increased engagement), participation data (on-track for graduation, high school diplomas earned, GED completion, Postsecondary & Workforce Readiness preparation scores), third-party provider data on program success, teacher feedback, student feedback, student reports, parent surveys, and research of other Colorado school districts' flexible instructional models.

Conclusion

The Department developed this REL and BLI Crosswalk Report to draw comparisons between national research literature and flexible instructional models implemented by Colorado districts and schools during the 2021-2024 Blended Learning Initiative. While the Crosswalk Tables and Recommendations detailed above are limited to the 2021 findings from REL, CDE's Accountability and Continuous Improvement Unit is currently conducting a 'BLI Student Outcome Impact 2021-2024' data analysis evaluation of K-12 students participating in programming permitted by the BLI variance waiver process. This evaluation is an internal CDE BLI Data Analysis Project initiative utilizing the SASIDs of K-12 Colorado students participating in instructional models during the variance waiver years. This data project is anticipated to be completed in multiple phases with the 2021-2022 data analyzed by early-mid 2023, the 2022-2023 data analyzed by early-mid 2024, and the 2023-2024 data analyzed by early-mid 2025 based on when state data is available to the Department. Each of the three years' data analysis will incorporate control cohorts, control groups, and other student indicators of the students participating in instructional models from the 2021-2024 waivers. The proposal's anticipated data sets include attendance reports, participation rates, assessment results, and state testing results. Students will be identified and confirmed through the SASIDs provided by the districts and schools. Student growth, progress, engagement, and performance will be measured alongside a time comparison (attendance, prior to COVID) and state-wide comparison (non-waiver students). The Department anticipates this three year evaluation will be completed in 2025.

Since the [Rules for the Administration of the Public School Finance Act (1 CCR 301-39) changes were adopted by the State Board of Education in March 2024](#), CDE has sunset the Blended Learning Initiative and concluded the blended learning and supplemental online variance waiver. Beyond the 2021-2024 BLI, the Department is now exploring flexible and alternative opportunities under the new rules and as reflected in the updated, annual Student October Count Audit Resource Guide. As of this report's publication in June 2024, CDE is currently collaborating with the field of Colorado school district leaders and entities to collectively collaborate on and receive support for these rule changes and learn how districts and schools may be considering new flexible learning designs.

For any questions regarding this document, please contact blendedlearning@cde.state.co.us.