OREGON
DEPARTMENT OF
EDUCATION

DIGITAL LEARNING INSTRUCTIONAL DESIGN & PEDAGOGICAL CONSIDERATIONS

Version 1.0

DIGITAL LEARNING INSTRUCTIONAL DESIGN & PEDAGOGICAL CONSIDERATIONS

OREGON DEPARTMENT OF EDUCATION

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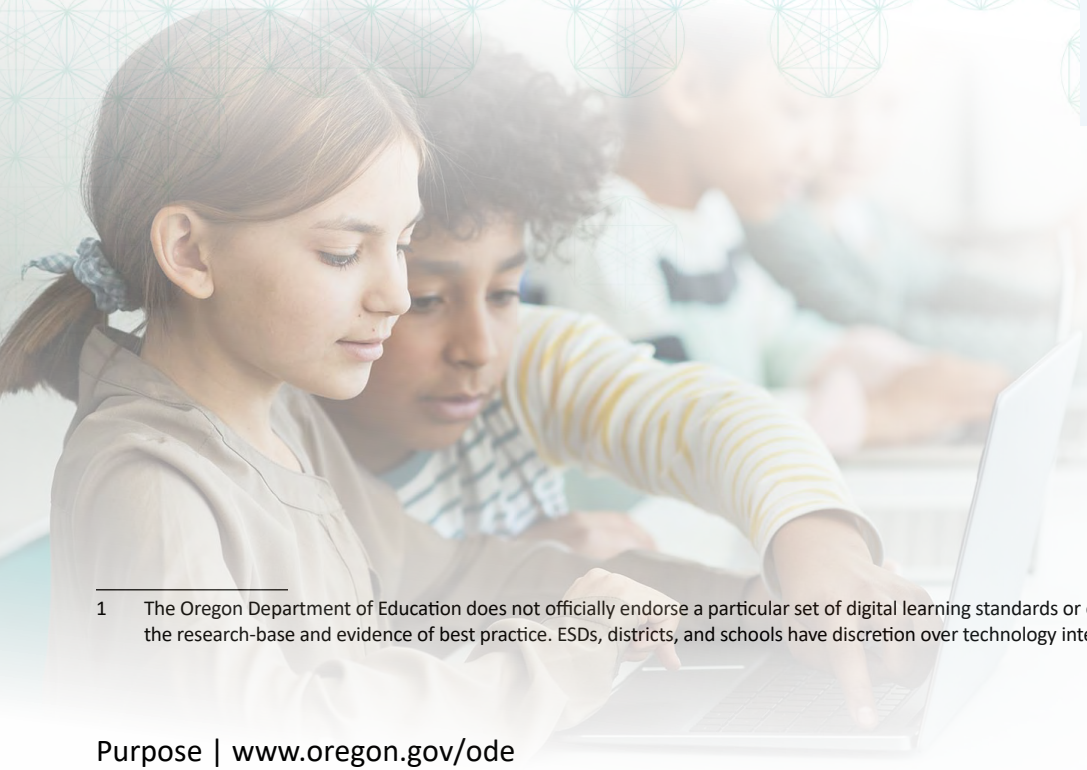
October 2023

Purpose

This resource provides information to support school and district administrators and educators in developing an equity-informed digital learning ecosystem. The approaches described within this resource are grounded in an understanding that when implemented with an equity-informed, anti-racist, and anti-oppressive lens, digital learning has the power to disrupt systems of oppression and marginalization, to engage and empower students and families, and to affirm students' racial, cultural and linguistic identities. **Digital Learning refers to "any instructional practice that effectively uses technology to strengthen a student's learning experience and encompasses a wide spectrum of tools and practices," as defined in ESSA (Every Student Succeeds Act). This term is inclusive but not limited to blended learning, hybrid learning, online and remote learning instructional models.**

Designed to be used in tandem with the Key Components of Digital Learning, in addition to other guidance and resources developed by ODE, this suite of resources can support schools and districts in designing a digital learning ecosystem that disrupts the digital use divide across instructional models from **in-person** learning using blended approaches, to **hybrid** learning with both in-person and online learning, and fully **online** or remote learning environments[1].

Throughout this document, you will see teacher and educator professional learning and professional development used broadly. These phrases are used as all encompassing to include general education teachers, special education teachers, English language development teachers, counselors, administrators, educational assistants, and classified staff. Developing an equitable digital learning ecosystem requires that the entire school community receives professional learning opportunities to learn the skills and knowledge to support students, families, caregivers, and the larger school community.



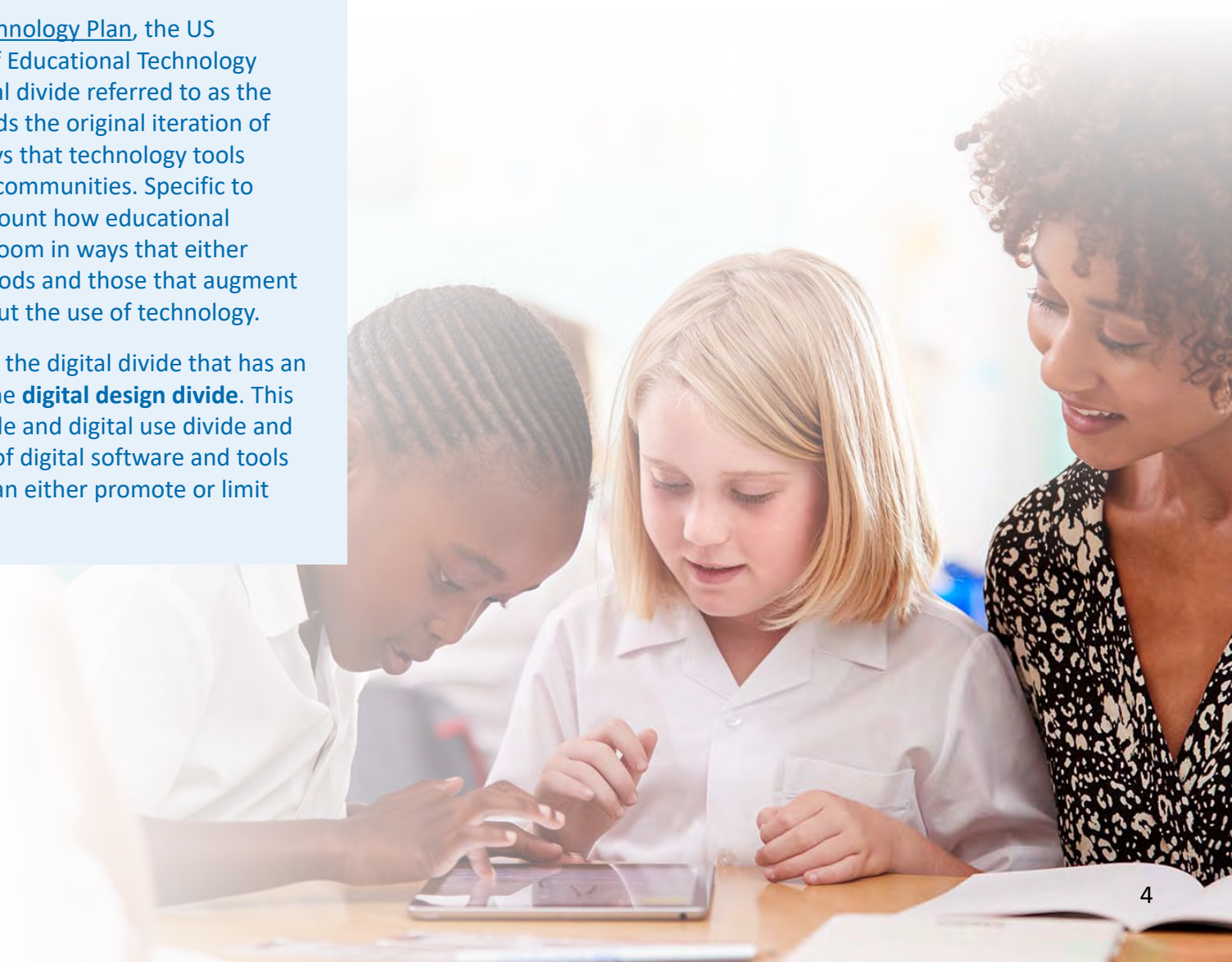
1 The Oregon Department of Education does not officially endorse a particular set of digital learning standards or educational technology tools at the time of this publication, however, they are included in this resource given the research-base and evidence of best practice. ESDs, districts, and schools have discretion over technology integration decisions.

THE THREE DIGITAL DIVIDES

Within the field of education, there are historic conversations related to the **digital divide** - which is the divide that occurs between students, families, and communities who have access to high speed internet and devices and those who do not. The Digital Divide continues to have an increased impact on students, families, and their caregivers today given the reliance on technology in the digital age.

In the 2016 National Education Technology Plan, the US Department of Education's Office of Educational Technology identified another form of the digital divide referred to as the **digital use divide**. This divide extends the original iteration of the digital divide to address the ways that technology tools are used by students, families, and communities. Specific to education, this divide takes into account how educational technology is used within the classroom in ways that either substitute traditional learning methods and those that augment and redefine what is possible without the use of technology.

A third and more recent iteration of the digital divide that has an increasing impact on education is the **digital design divide**. This divide overlaps with the digital divide and digital use divide and is used to describe how the design of digital software and tools and digital instructional materials can either promote or limit learning for students.



STRUCTURE OF DOCUMENT

This resource is designed to support educators and education leaders in developing an equitable digital learning ecosystem. The document includes three sections which each provide information aligned with different aspects of developing this ecosystem.

DIGITAL INSTRUCTIONAL MODELS

This section provides an overview of each instructional model including Online Instructional Models, Hybrid Instructional Models, and In-Person Instructional Models using blended learning. Each subsection is organized as follows: overview of the model, essential design questions, and key pedagogical considerations.

TECHNOLOGY INTEGRATION FRAMEWORKS

This section provides an overview of multiple technology integration frameworks and models that support equitable and intentional technology integration. The subsections are organized in accordance with the two frameworks and two models highlighted in this resource including the TPACK Framework, the Triple E Framework, the SAMR Model, and the PIC-RAT Model. Each subsection provides an overview as well as examples in practice.

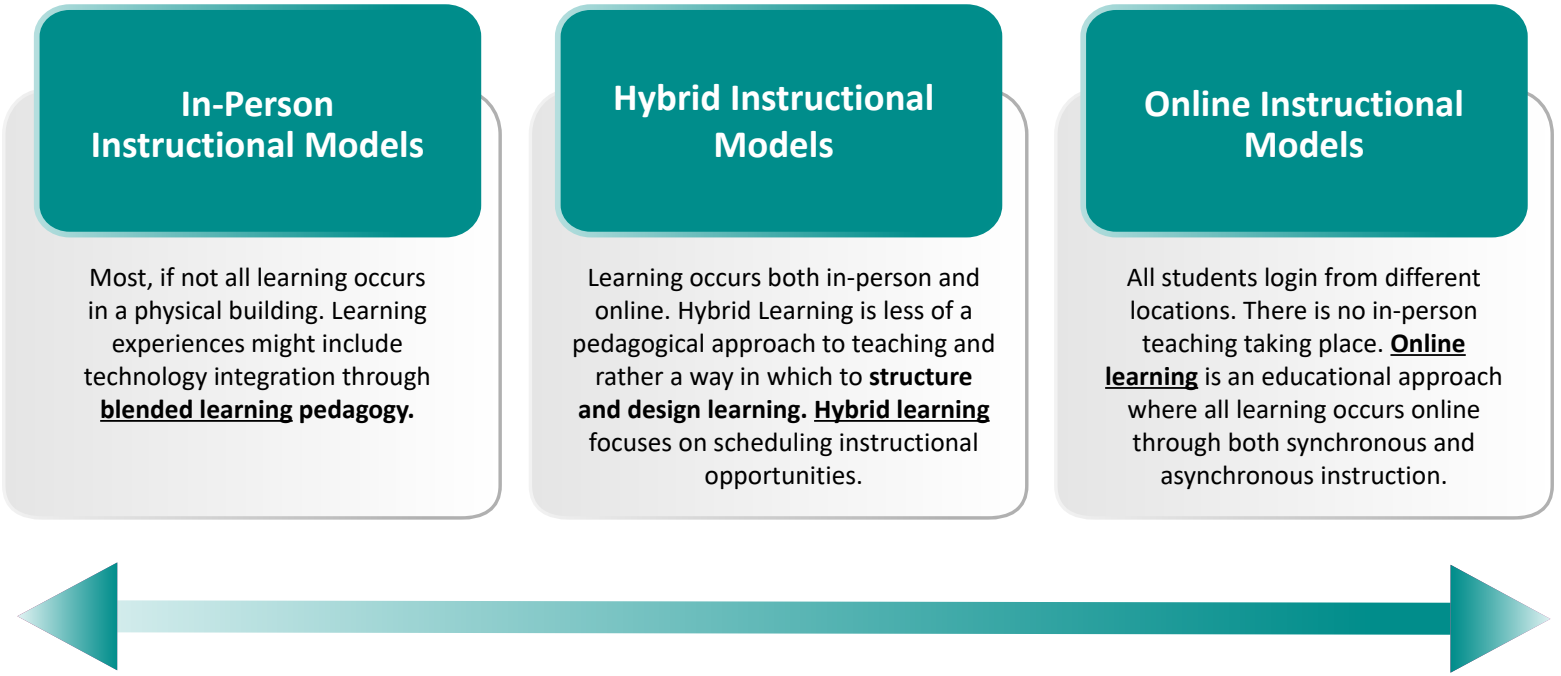
STANDARDS THAT SUPPORT A DIGITAL LEARNING ECOSYSTEM

This section provides an overview of national digital learning standards that support the integration of technology across instructional models. The subsections include Digital Learning Standards for All Instructional Models and Standards for Online Instructional Models.

Digital Instructional Models

Instructional models can be thought of as existing on a spectrum moving from in-person learning to hybrid to fully online learning environments. The spectrum (Figure 2) describes the variation of these instructional models. While each model differs with regard to how and where students are learning, there are consistencies across models including the importance of centering relationships and mental health, designing and implementing evidence-based pedagogy and practice, and ensuring that all students have access to high quality instructional materials. Read more about these key components in the Key Components of Digital Learning.

FIGURE 1. Spectrum of Digital Instructional Models



When implementing a new instructional model or working toward continuous improvement within a currently implemented instructional model, considering program evaluation aligned with design-based implementation is helpful in ensuring that the planning efforts are meeting the intended goals. Potential strategies to support in this work include:

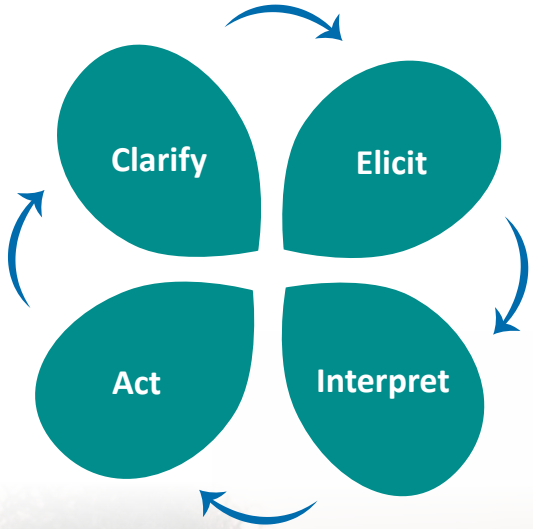
- Using the ODE's Equity Decision Tools for Leaders to support making clear choices with a consistent check against key values and input;
- Reviewing ODE's Community Engagement Toolkit to ensure that student, family, caregiver, and community voice are central to decision making processes; and
- Engaging with resources developed by the National Implementation Research Network and Design Based Implementation Research to center implementation science in planning and continuous improvement.

No matter the instructional model implemented within the school or classroom, intentionally integrating formative assessment practices within the instructional design process is key to ensuring equitable learning experiences and outcomes for all students. Appendix D: Technology Considerations for Formative Assessment provides a table to support educators in considering how technology maps onto the 4 dimensions of formative assessment: Clarify, Elicit, Act, and Interpret.[2] Educators and educational leaders are encouraged to read more about the formative assessment process on ODE's Formative Assessment website.

INSTRUCTIONAL DESIGN ACROSS INSTRUCTIONAL MODELS – CENTERING UDL

Across all instructional models, it is important that instruction is grounded in Universal Design for Learning (UDL). In Reimagining the Role of Technology in Education: 2017 National Education Technology Plan Update, the authors highlight the importance of designing learning experiences that use Universal Design (UD) in order to ensure that instructional practices are accessible and increase equity of learning opportunities for all students. The Center for Applied Special Technology (CAST) provides extensive resources for schools and districts in planning with Universal Design for Learning at the foundation. CAST's UDL Guidelines and CAST Remote Learning Resources

FIGURE 2. Formative Assessment Process



2 The Formative Assessment Rubrics, Reflection and Observation Tools to Support Professional Reflection on Practice is an additional tool that extends these four dimensions and can be helpful when planning for intentional formative assessment across instructional models.

ONLINE INSTRUCTIONAL MODELS

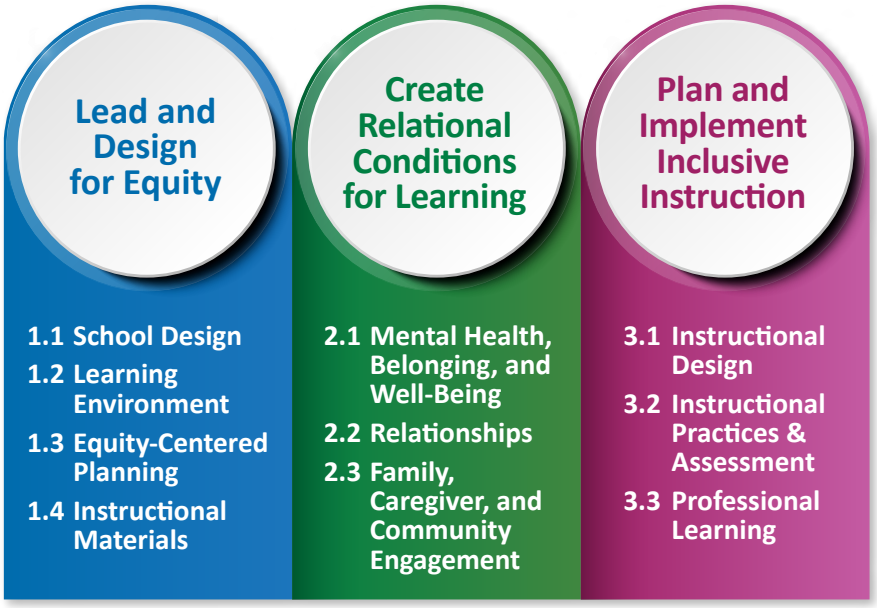
The number of students engaging in online learning has continued to increase in Oregon as well as across the nation over the past two decades. Within online schools and programs, students engage in learning outside of the brick and mortar school setting using technology to support student learning. Within an online learning model, all students login from different locations. There is no in-person teaching taking place. Online learning is an educational approach where all learning occurs online through both synchronous and asynchronous instruction.[3]

Oregon has also started using the language of remote learning to encompass all educational models of instruction where the student and the teacher are not in the same physical location for more than half of the student's instructional time. Remote learning instructional models may be primarily online (using internet-based platforms and technology), paper-and-pencil (non-internet based), or a combination of both. Remote learning is inclusive of online, virtual, and non-internet based models. This particular guidance focuses on remote models that integrate technology as a way to extend the four walls of the classroom in order for students to learn from the location that best meets their needs.

Essential Design Questions

During the summer of 2022, ODE released the Online & Remote Learning Guidance: Critical Requirements and Design Indicators to establish minimum expectations for online schools and programs. The guidance defines the essential elements for designing equitable, relational, and inclusive online and remote schools and programs[4]. The guidance is designed around three pillars that center student experience: *Lead and Design for Equity, Create Relational Conditions for Learning, and Plan and Implement Inclusive Instruction*. Embedded in each pillar are a set of design indicators with questions for design and continuous improvement providing connections with policy and opportunity for reflection.

FIGURE 3. Online and Remote Learning Pillars



3 "Online Instructional Model" is a working definition for the purposes of this resource, not a definition in rule or policy. "Remote Instruction" is used throughout attendance policy [Cumulative Average Daily Membership Policy Manual] and "Virtual Status" has a specific definition for purposes of data collection which can be found in the Virtual Status FAQ.

4 It is important to note that while the guidance is related to both online and remote instruction, not all remote schools utilize online learning as a main component of their program model.

TABLE 1. Online and Remote Learning Guidance Pillars and Critical Design Questions (Indicators)

Design Element (Pillar)	Critical Design Questions (Indicators)
Lead and Design for Equity	▪ **Indicator 1.1 School Design:** Are all state and federal requirements for appropriate staffing and instructional time are met while prioritizing teacher-student interaction? ▪ **Indicator 1.2 Learning Environment:** What structures are used to ensure that classes, curriculum, instruction, and other parts of the school/program provide a safe, welcoming, and well-rounded space for all students? ▪ **Indicator 1.3 Equity Centered Planning:** Is an equity lens used when engaging in planning and continuous improvement aligned for student success? ▪ **Indicator 1.4 Instructional Materials:** Has a review and evaluation process that is aligned to state requirements for instructional materials adoption developed?.
Create Relational Conditions for Learning	▪ **Indicator 2.1 Mental Health, Belonging, and Well-Being:** Is there support and responsive monitoring for students' mental health, belonging, and well-being? ▪ **Indicator 2.2 Relationships:** Are consistent opportunities for students to develop authentic and meaningful connections with peers and adults created? ▪ **Indicator 2.3 Family & Community Engagement:** Are reciprocal and authentic systems for meaningful family and community engagement and communication structures designed and implemented?
Plan and Implement Inclusive Instruction	▪ **Indicator 3.1 Instructional Design:** Is a student-centered learning environment that plans and scaffolds for learner development and learning differences established? ▪ **Indicator 3.2 Instructional Practices & Assessment:** Are instructional practices and a balanced assessment system designed for purposeful online pedagogies that support all students with particular attention to students who are historically and systemically marginalized? ▪ **Indicator 3.3 Professional Learning:** Is a system for strategic, sustained, and supportive professional learning and teacher evaluation based on established professional standards for online or remote pedagogies instituted?

Key Pedagogical Considerations

Pillar #3: Plan and Implement Inclusive Instruction within the Online & Remote Learning Guidance: Critical Requirements and Design Indicators outlines key pedagogical considerations to attend to when designing and implementing online learning. Examples of potential indicators that are supportive of equitable instructional design within online and remote programs, are highlighted below. Using the indicators below as well as the additional indicators can support schools and districts in designing a model that offers student-centered learning opportunities to all students.

ONLINE INSTRUCTIONAL DESIGN APPROACHES

Additionally, it is important that online/remote school leaders consider how they will structure learning opportunities within the online learning environment e.g. synchronous learning, asynchronous learning, and bichronous learning. No matter the approach, maintaining authentic and meaningful teacher interaction, be it through synchronous or asynchronous means, is an important component of learning.[5]

HIGHLIGHTED INDICATORS FROM THE ONLINE & REMOTE LEARNING GUIDANCE

Indicator 3.1 Instructional Design: Establish a student-centered learning environment that plans and scaffolds for learner development and learning differences.

Indicator 3.2 Instructional Practices & Assessment: Design and implement instructional practices and a balanced assessment system designed for purposeful online pedagogies that support all students with particular attention to students who are historically and systemically marginalized.

TABLE 2. Online Instructional Design Approaches

	Synchronous Learning	Asynchronous Learning	Bichronous Learning
Description of Design Approach	Simultaneous interactions either in person or through the use of an interactive technology. This may include audio only, video only, or audio and video. Key to the definition of synchronous is the opportunity for interaction between the educators and students that occurs in or near real time, allowing for feedback and adjustments.	Flexible non-simultaneous approaches using audio, video, and learning platforms. Key to the definition of asynchronous is that there is limited or no opportunity for interaction between the staff and the student that occurs in or near real time.	Intentional blend of both synchronous and asynchronous learning where students can participate in anytime, anywhere learning for portions of their learning with other portions including same time and same space learning.

5 To learn more about synchronous and asynchronous learning and considerations regarding each model, check out Dr. Caitlin Tucker's "Asynchronous vs. Synchronous: How to Design for Each Type of Learning."

	Synchronous Learning	Asynchronous Learning	Bichronous Learning
Examples of Instructional Strategies aligned with Design Approach	Holding a live class through video conferencing. Facilitating interactive webinars. Having chat-based conversations that happen in real time.	Posting assignments and conversations through a Learning Management System (LMS). Sharing a weekly schedule, choice board, assignment, and instructions. Video or audio recordings of instruction shared with students.	Holding a live class and having students engage in discussions through a discussion board on an LMS. Holding a live class and recording the class so that students can review on their own asynchronously.
Examples of Communication Strategies aligned with Design Approach	Engaging in a video conference. Open discussion opportunities e.g. holding video office hours. Talking on the phone.	Feedback on assignments left through comments or other methods. Exchanging emails and other forms of communication between educators, students, families, and caregivers. Communication through apps such as Remind or Parent Square.	Open discussion opportunities with emails as follow-ups. Holding office hours and communicating through apps such as Remind[6] or Parent Square.
Potential Benefits of Design Approach	Provides increased opportunities for teacher and student interaction. Provides the ability for students to ask questions about course content in real-time. Allows for teachers to provide real-time feedback to students. Provides opportunities for formative assessment to occur during instruction. Allows for teachers to readjust lessons based on student feedback and formative assessment data. Creates the potential for student-student collaboration.	Allows students to work at their own pace. Provides students with flexibility to access course content and work in a way that fits their learning needs and style. Allows teachers, families, caregivers, and students to collectively develop individualized learning paths for students. Provides for expanded opportunities for teacher-student interaction at a time that is beneficial to the student and their families and caregivers. Allows students to access information multiple times e.g. front loading or reviewing the content.	Provides the benefits of both synchronous and asynchronous learning allowing for teachers to design learning in a way that supports individualized student learning.

6 It is important to note that while Remind is commonly used by schools and educators across the state, Common Sense Media has provided a student data privacy warning about this platform. Educators are encouraged to read the Privacy Evaluation from Common Sense Media if using Remind or considering using remind.

	Synchronous Learning	Asynchronous Learning	Bichronous Learning
Potential Challenges of Design Approach	Requires an educator to be present to facilitate learning and discussion. As students are all learning at the same time, there is less flexibility with regards to when students engage with their learning. Video conferencing websites and applications such as Zoom, Teams, etc. require students to have high-speed internet access which can present an equity issue if students do not have access.	Requires extensive planning to ensure that all students have the supports they need in order to access and engage with the materials. As there is not an educator present during student learning, this can present a barrier for student learning, particularly students who need additional support. Given that students are working independent of an educator, it can be challenging to build relationships.	Requires extensive planning on part of the educator to ensure that there are both synchronous and asynchronous materials prepared. Video conferencing websites and applications such as Zoom, Teams, etc. require students to have high-speed internet access which can present an equity issue if students do not have access.

HYBRID INSTRUCTIONAL MODELS

A hybrid instructional model is a structured approach to designing learning experiences that utilize both in-person learning and online/ remote learning with opportunities for students to learn from various locations based on scheduling needs. The hybrid instructional model allows a range of implementation options to help maximize variables such as scheduling, staffing, and technological capacity to best meet the strengths and needs of the local context. Hybrid instructional models can vary greatly due to multiple design features unique to the school, grade level, and student needs.

Essential Design Questions[7]

The below questions may be helpful as a resource for tuning as teams design, reflect, or revise their hybrid models and are making decisions about how to organize people, time and resources:

1. Are there clear guiding principles with regards to the purpose in designing for hybrid learning?
2. What does the data say in regards to potential plans to ensure the support of all students in both the in-person and the online and remote options?
3. Does the design ensure consistent opportunities for active participation and communication between educators, families, and students?
4. Does the hybrid design meet Division 22 instructional time requirements for both the in-person and online remote settings in accordance with the Online and Remote Learning Guidance?
5. Is there a plan to ensure scheduling opportunities that will maximize student learning and inclusive experiences?
6. How are instructional supports for student learning integrated in both in-person and online and remote learning?
7. How will student, family, and caregiver needs be central to the decision making process with regards to scheduling hybrid learning opportunities?
8. How will Equity Decision Tools for School Leaders be integrated into the planning process?

7 Adapted from Decision Points for COVID Comeback Models

Hybrid Instructional Model Design Elements and Critical Design Questions

The considerations and resources presented below offer additional information for school leaders to align their planning against the goals of supporting quality instruction, enabling equitable technological access for families, and addressing students strengths and needs.

TABLE 3. Hybrid Instructional Model Critical Design Elements and Questions

Design Element	Critical Design Questions
Staffing and Professional Development	▪ How can staffing assignments ensure continuity in student-teacher relationships across hybrid schedules? ▪ Are there opportunities to explore funding options for the creation of a district and/or school instructional technology specialist or TOSA (Teacher on Special Assignment)? ▪ How can teaching teams be organized to maximize teacher expertise and experience in each of the hybrid settings? ▪ What opportunities do teachers have for collaboration, collective planning, and observation of one another's teaching across instructional settings? ▪ to watch/observe one another in-person and remote learning settings? ▪ How can team teaching models, where two adults have similar schedules to enable instructional planning, data review, and adjusting next steps for learners be integrated and supported? ▪ How is professional development structured that models both synchronous and asynchronous learning for all educators including classroom teachers, special education teachers, English language development teachers, educational assistants and anyone else who supports students, families, and caregivers?
Instructional Design – with a focus on scheduling	▪ Can schedules and student groupings prioritize students needing additional support? ▪ How can scheduling lead to multiple ways to complete asynchronous assignments (or homework) including: spending time with students during office hours or "group asynchronous time," allowing students to complete assignments when they may have a caregiver present outside of normal school hours, etc.? ▪ How is access to a well rounded educational experience for students maintained in both in-person and online environments including but not limited to electives, specials, enrichment, career exploration, and social-emotional support? ▪ How can educational assistants (EAs) support students, families, and caregivers throughout each aspect of their learning?
Reaching All Learners[8]	▪ How is the instructional sequence designed in an effort to ensure coherence of essential learning that maximizes the benefits of both in-person and online/remote learning environments? ▪ What opportunities are there for relationship building between students, teachers in both in-person and online settings? ▪ How is hybrid learning designed to build on students' academic background, life experiences, culture and language in ways that in-person or online alone would not? ▪ Which learning experiences and lesson structures are best experienced in-person (i.e., labs, hands-on activities, small groups, CTE, instructional support)?

8 Additional resource: Teaching Lab's Distance and Hybrid Learning Principles offers core principles and guiding questions for lesson planning.

Design Element	Critical Design Questions
Technology Considerations[9]	▪ What strategies are being used to design backwards for long-term sustainability and systems-level change? Who is involved in those conversations? ▪ How is equitable access to the technology and connectivity needed for learning in both synchronous and asynchronous learning guaranteed for all students? ▪ Which device options meet minimum requirements and are accessible for needed tools and platforms? How are these being prioritized? ▪ How is training provided to staff, students and families around student data privacy and cybersecurity?
Family, Caregiver, and Community Support	▪ How is data (both quantitative and qualitative) used to understand the impact of hybrid schedules on students and families? ▪ What communication expectations and logistics are developed ahead of time including translation services and closed captioning (if online/recorded)? ▪ What opportunities are provided to community members to give input and ask questions with access to simultaneous translation which may be unique to hybrid schedules? ▪ How are student, family, and caregiver voices central to decision-making processes and the identification of extra support or scaffolds as might be unique to a hybrid schedule? ▪ How can the needs of staff along with families and caregivers be addressed through scheduling decisions while offering consistency and routine? ▪ How is the impact on transportation for families and caregivers with more than one student attending the same school considered when developing students' schedules?

Key Pedagogical Considerations

When planning for hybrid learning, the TPACK framework can support schools in first and foremost centering strong pedagogy across instructional models. As the hybrid instructional model is focused on structuring learning experiences rather than the pedagogical approaches within those learning environments, educators and education leaders are encouraged to consider how instruction is designed to support students within both in person and online learning environments. Support can be found within the Benefits of In-Person Instructional Approaches Using Blended Learning Pedagogy and In-Person Instructional Models Using Blended Learning.

9 These questions are drawn from the Key Components of Digital Learning.

SPOTLIGHT ON INTERMOUNTAIN ESD VIRTUAL ACADEMY

InterMountain ESD Virtual Academy is part of a consortium model developed to support schools within six Eastern Oregon counties. As part of the consortium, Intermountain ESD Virtual Academy supports local districts in providing virtual learning opportunities designed to support students and families needing flexibility in learning while still retaining attendance in their local school district. Students attending the InterMountain ESD Virtual Academy remain enrolled in their local district, while having the opportunity to learn online from licensed teachers. This structure allows for students to participate fully in extracurricular activities with their home district while learning online. K-6 students are enrolled in full-time online learning, while 7-12 students have the opportunity to register in a hybrid mode with online classes and district based classes or 100% online. Additionally, students have access to district learning labs for extra support and enrichment opportunities as well as weekly learning labs and coordinated learning with the STEM Hub for science experiences. All special plans, including special education, talented and gifted, English Language Development, and 504 will be supported by the local district and followed by teachers within the online program. Additional information about the InterMountain ESD Virtual Learning Program can be found at the website.

IN-PERSON INSTRUCTIONAL MODELS USING BLENDED LEARNING

Within an in-person instructional model, learning experiences can be enhanced through blended learning pedagogical approaches which blend in-person learning with technology. The goal within a blended learning environment is for technology to be used in a way that deepens, augments, and enhances student learning rather than replacing more traditional methods. Blended learning can provide opportunities for educators to modify learning through technology to best meet the individual needs of their students, augment learning through the integration of technology, and redefine what is possible within the classroom by extending learning opportunities through the integration of technology.

TABLE 4. In-Person Design Elements and Critical Questions[10]

Design Element	Critical Questions
Staffing and Professional Development	▪ What type of professional development is needed for school leadership and blended learning teachers? ▪ How will professional development be delivered and who will provide it? ▪ How will ongoing and continuous professional development be provided? ▪ How will teaching and the role of the teacher change? ▪ How will best teaching practices be modeled and shared?
Instructional Design – with a focus on pedagogy	▪ What is the school's pedagogical philosophy and how will this be central to building blended learning? ▪ What student needs are being fulfilled by implementing blended learning? ▪ How will blended learning be customized to meet student needs? ▪ What data should be collected to support individualized student learning? What systems are in place to collect this data?
Reaching All Learners[11]	▪ How are instructional materials being thoughtfully considered with regards to accessibility, interoperability, and cultural responsiveness? ▪ What support systems are needed to build an equitable blended learning instructional approach?
Technology Considerations[12]	▪ What technology is currently available and what investments need to be made to the school's technological infrastructure, including but not limited to bandwidth, hardware, software, devices, and network? ▪ What technical support for students and teachers is needed to maintain technological infrastructure (human, interoperability)? ▪ What funding will provide the support systems needed to build and sustain the technology needed for the program?

10 Adapted from The Aurora Institute who has identified six elements to consider when planning and implementing blended learning. Read more about each of the elements in "A Roadmap for Implementation of Blended Learning at the School Level."

11 Additional resource: Teaching Lab's Distance and Hybrid Learning Principles offers core principles and guiding questions for lesson planning.

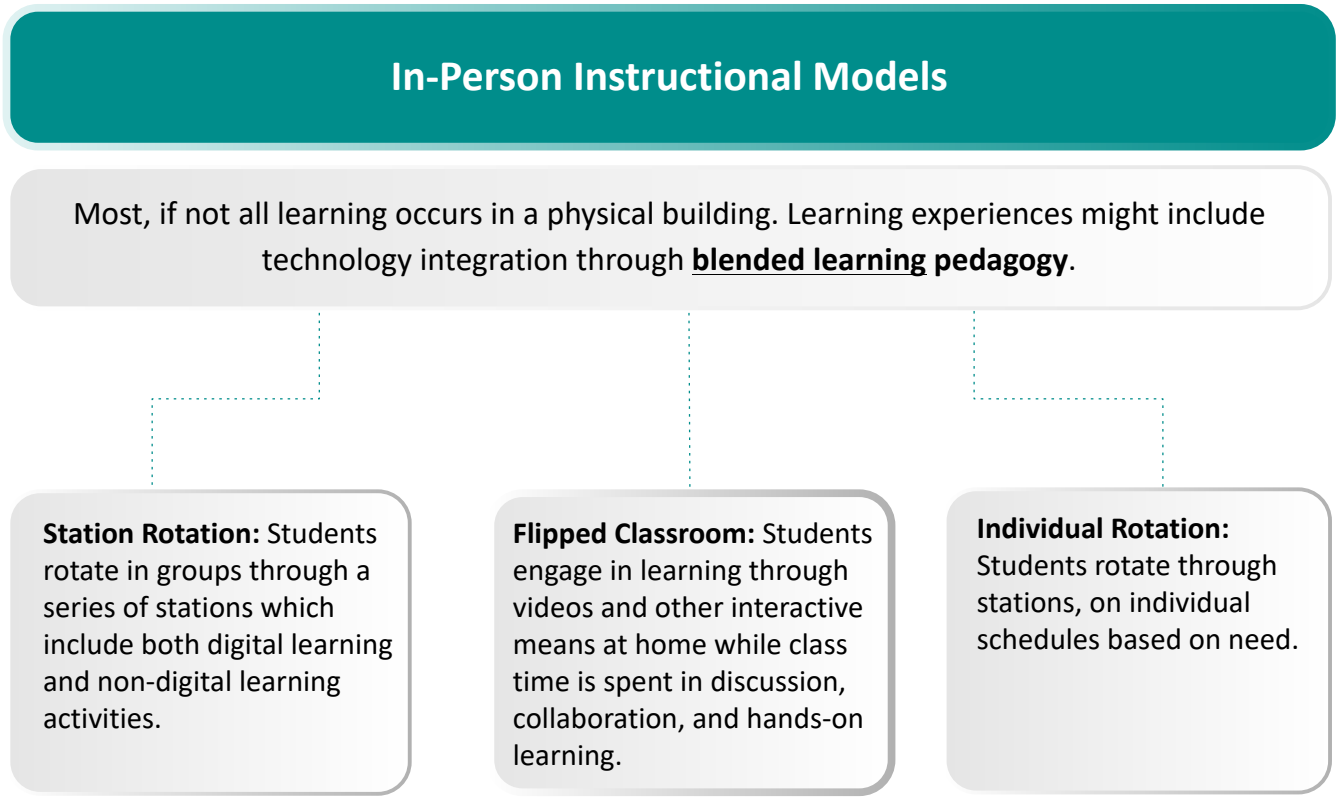
12 These questions are drawn from the Key Components of Digital Learning.

Design Element	Critical Questions
Family, Caregiver, and Community Support	▪ How is data (both quantitative and qualitative) used to understand the impact of blended learning on students and families? ▪ What opportunities are provided to community members to give input and ask questions about the blended learning instructional approach?

Key Pedagogical Considerations

Blended learning has the potential to extend students' educational experience through individualized/personalized learning pathways as students can participate in some activities through digital means and others through non-digital means. There are several blended learning models that have shown promise for creating equitable learning environments students within a blended learning classroom.

FIGURE 4. In-Person Instructional Approaches Using Blended Learning Pedagogy



BENEFITS OF IN-PERSON INSTRUCTIONAL APPROACHES USING BLENDED LEARNING PEDAGOGY

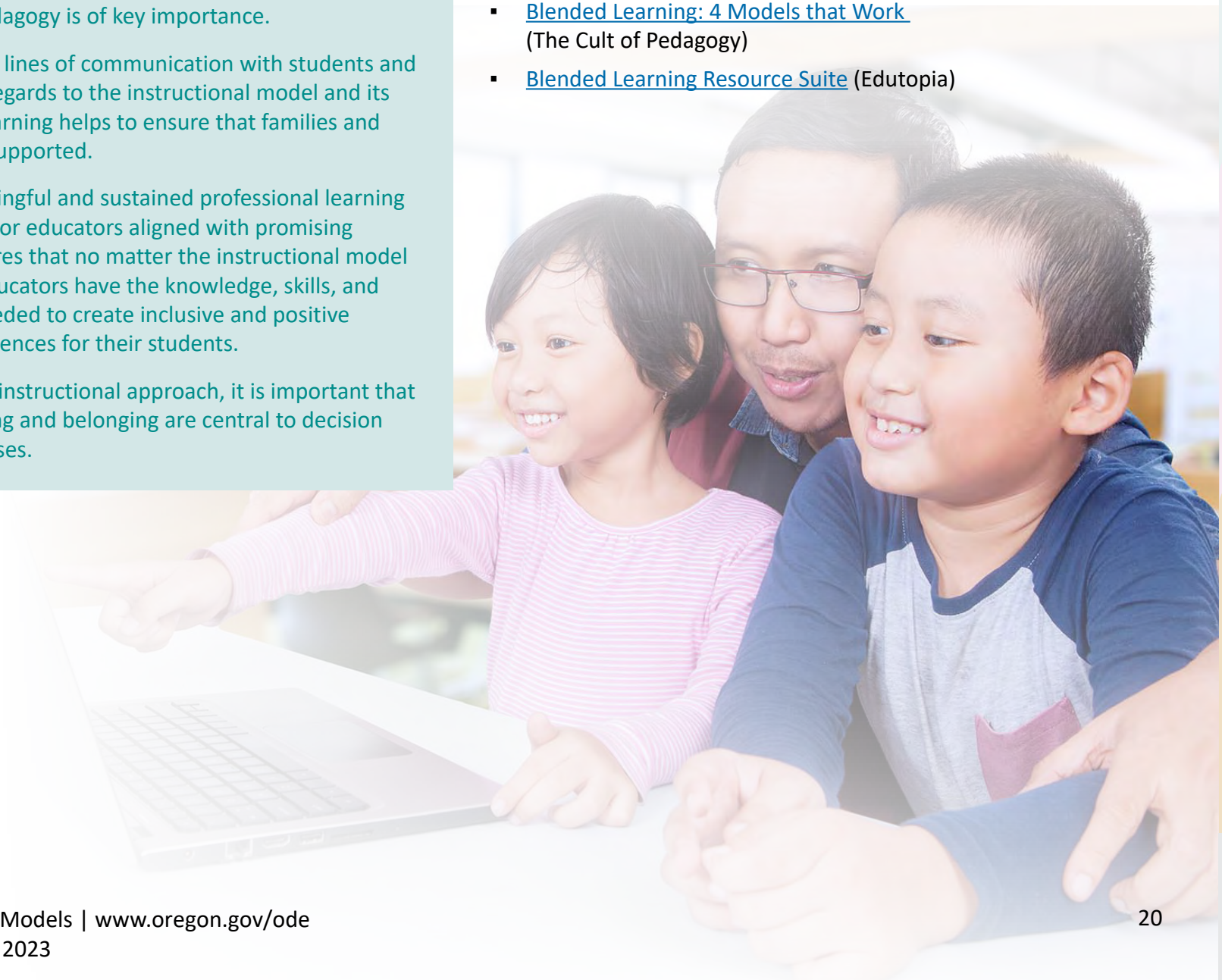
	Station Rotation	Flipped Classroom	Individual Rotation
Benefits of Instructional Approach	Opportunities for differentiated learning within each station along with increased collaboration between students.	Opportunities for higher-order thinking, project-based learning, and increased collaboration between students.	Opportunities for individualized learning with the rotations based tailored to student need and performance.
Challenges of Instructional Approach	Providing students with support and holding them accountable for independent work can be challenging, particularly if the teacher is working with a small group. Developing rubrics to guide each station can help to combat this concern.	If students do not have **high-speed internet** or ready access to a device at home, this can create an equity barrier. Blending a flipped classroom and station rotation can remove this barrier in that one of the stations can provide the "flipped" material.	If students do not have the scaffolding to support independently navigating their own station rotation, it can be challenging to ensure engagement. Working with students to create their "playlists" can ensure buy-in and an understanding of the expectations.

DIGITAL INSTRUCTIONAL MODELS KEY TAKE-AWAYS

- No matter which instructional model being used – online learning, hybrid learning, or blended learning during in-person instruction, being thoughtful about the learning design and pedagogy is of key importance.
- Providing clear lines of communication with students and families with regards to the instructional model and its purpose for learning helps to ensure that families and students feel supported.
- Creating meaningful and sustained professional learning opportunities for educators aligned with promising practices ensures that no matter the instructional model being used, educators have the knowledge, skills, and experience needed to create inclusive and positive learning experiences for their students.
- No matter the instructional approach, it is important that student learning and belonging are central to decision making processes.

Additional Resources

- District Tool for Assessing Online Professional Learning Platforms (The Learning Accelerator)
- Innovative Learning Implementation Framework (The Learning Accelerator)
- Blended Learning: 4 Models that Work (The Cult of Pedagogy)
- Blended Learning Resource Suite (Edutopia)



Technology Integration Frameworks

When designing an equitable digital learning ecosystem through intentional technology integration, it is important to begin with learning targets and pedagogical approaches as technology should serve as an enhancement as opposed to the center of the instructional design.

There are several frameworks and models that can support the development of an equitable digital learning ecosystem. Each of these frameworks and models conceptualizes technology integration as an instructional approach that centers strong pedagogy with technology being used to modify, augment, extend, and redefine learning.

While these frameworks and models are grounded in different research and understandings of technology integration, they do not need to be thought of separately, rather it is helpful to understand them as different pieces of the puzzle when designing an equitable digital learning ecosystem.

School and District Leaders:

Consider how you might integrate these frameworks and models within your digital learning ecosystem. No matter where you are on your journey, they can provide a starting point for supporting educators in using technology in intentional and equitable ways that center strong pedagogy and practice. For example:

- You might choose one of these frameworks or models and use them in coaching conversations with teachers;
- You might ask content or grade level teams to identify one of the frameworks or models and use this as the basis for conversations during their PLC (professional learning community conversations).
- You might ask teachers to engage in self-assessment and set goals on the basis of one or more of the frameworks and models.

Educators:

Integrating technology in your classroom in intentional ways that can lead to promise for students can be challenging given that there are so many "tech tools" available to use within your instruction. These frameworks and models, however, can support you in moving away from the "tech tool" as being central to your instructional design and toward ensuring that you begin planning with learning targets and pedagogical approaches first. You might consider using these frameworks and models in the following ways:

- Choose one that resonates with you and "try it on" by setting bite-size goals for yourself and your students. Ask your students throughout the process how the change in your approach to technology integration is impacting their learning experience.
- Find a colleague who is interested in technology integration and learn more about one of the frameworks and models. Do a deep dive into the resources and discuss how you might use this in your planning and instruction.
- Identify one or more frameworks or models and try using them when planning units and lessons. Set time aside to reflect on how it went and what you might change in the future.

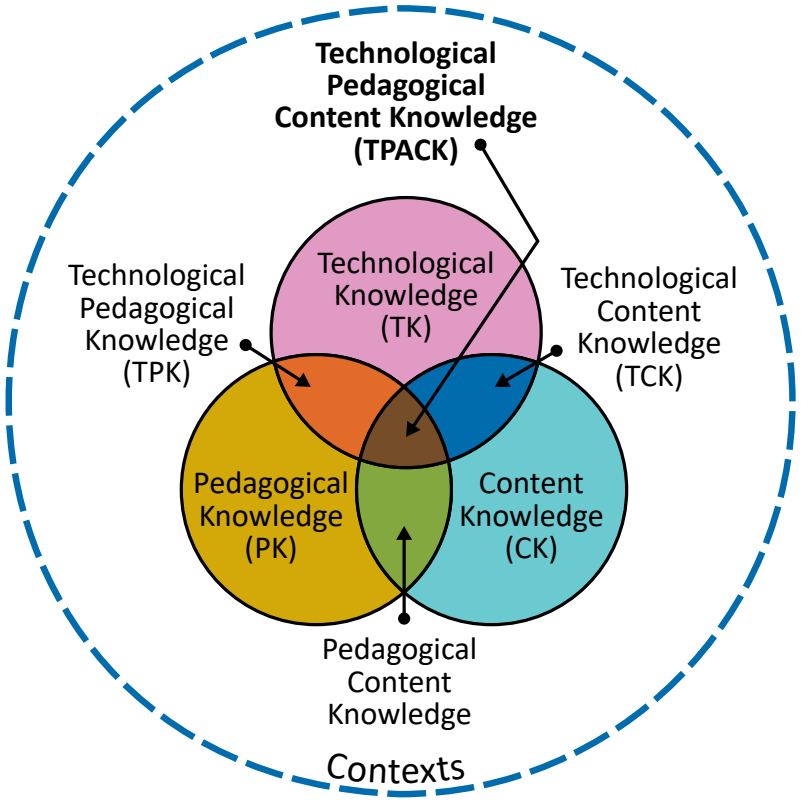
TPACK FRAMEWORK

The TPACK Framework was developed by Mishra & Koehler (2006)[13] to emphasize that teacher knowledge exists at the intersection of content knowledge, pedagogical knowledge, and technology knowledge. At this intersection is Technological Pedagogical Content Knowledge (TPACK). The authors emphasize that "TPACK is the basis of effective teaching with technology, requiring an understanding of the representation of concepts using technologies; pedagogical techniques that use technologies in constructive ways to teach content; knowledge of what makes concepts difficult or easy to learn and how technology can help redress some of the problems that students face; knowledge of students' prior knowledge and theories of epistemology; and knowledge of how technologies can be used to build on existing knowledge to develop new epistemologies or strengthen old ones" (Koehler & Mishra, 2009).[14]

The TPACK framework understands that technology in and of itself will not transform learning, rather it is the connections and intersections between a teachers' knowledge about their content, their pedagogical practices, and the technology being used to enhance the learning experience for students. The TPACK Model "emphasiz[es] the complex interplay of these three bodies of knowledge" (p. 1025).

The TPACK framework is foundational to technology integration no matter the instructional model. While the instructional model changes the way in which learning is delivered and students engage with their learning, teacher knowledge being understood as the intersection of content knowledge, pedagogical knowledge, and technology knowledge is essential to ensuring that technology is used only when it will enhance student learning opportunities.

FIGURE 5. TPACK Framework



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Examples of utilizing the TPACK framework are included in the table below as a starting point for schools and districts to consider how they might approach technology integration with equity, teacher knowledge, and student learning at the forefront.

13 Mishra, P. and Koehler, M. J. (2006). Technological Pedagogical Content Knowledge: A Framework for Teacher Knowledge. *Teachers College Record*, 108(6), 1017-1054. doi: 10.1111/j.1467-9620.2006.00684.x.
14 Koehler, M. J., & Mishra, P. (2009). What is technological pedagogical content knowledge? *Contemporary Issues in Technology and Teacher Education*, 9(1), 60-70.

Examples of TPACK in Practice

This chart is designed to be read left to right with an understanding that content standards drive the learning objectives, pedagogical approaches create learning opportunities for students to engage with the learning objectives, and technology serves as an enhancement when appropriate and meaningful for student learning. It is important to note that if the technology was removed from each of these examples, students might still be able to engage in the activity, however, the technology described enhances the learning experience for students and provides the teachers with opportunities to differentiate and seamlessly collect formative assessment feedback. Therefore, when integrating technology in the classroom, all of the below elements (content, pedagogy, and technology) are critical to student learning.

TABLE 5. TPACK Examples by Content Standard, Instructional Activity, and Technology Tool

Grade Level & Content Area	Content (Content Standard)	Pedagogy (Instructional Activity)	Technology (Tech tools to Enhance Learning)
Middle School Language Arts	7.RI.2 Determine two or more central ideas in a text and analyze their development over the course of the text; provide an evidence-based summary of the text.*	Students read an informational article about a topic that is tied to the theme of the unit. Working in partners, they use a graphic organizer to identify two or more central ideas in the text and use this information to provide an evidence-based summary.	Students read an article from Newsela (differentiated to meet their reading level with options for translated materials). They work together to document and organize their ideas on a graphic organizer and then add their ideas to a Padlet.
Fourth Grade Math	4.NF.A.1 Use visual fraction representations to recognize, generate, and explain relationships between equivalent fractions.	Students look at visuals of fractions and discuss their reflections based on teacher generated questions in small groups.	The teacher uses Fraction Talks as a visualization activity for exploring and reflecting on questions related to fraction. This is paired with Google Jamboard so that students can write their reflections to the questions posed.
Fifth Grade Science	5.PS2.1 Support an argument that the gravitational force exerted by Earth on objects is directed down.	Students work in small groups to learn about gravitational force. Teacher checks for understanding of the concept by administering a formative assessment.	Students PhET Interactive Simulation to engage with an interactive simulation in small groups. The teacher then gives a formative assessment using Quizziz.

Grade Level & Content Area	Content (Content Standard)	Pedagogy (Instructional Activity)	Technology (Tech tools to Enhance Learning)
Second Grade Social Sciences	2.17 Identify and describe community celebrations, landmarks, symbols and traditions, and explain why they are significant to the cultural heritage of members of the community.	Students look at pictures and videos of a community based on the topic of study and discuss their reflections in small groups using sentence frames to generate dialogue.	Students take a virtual field trip using Google Expeditions about the community they are studying. Working in pairs, they create a Flip (formally Flipgrid) that identifies one aspect of the community and explains why it is significant to the cultural heritage of members of the community.
High School Visual Arts	VA.1.CR1.HS1 Individually and/or collaboratively design an object or artwork that is based on a need, theme, or aesthetics that demonstrates developing technical skill.	Students work together in teams to identify a community issue about which they want to raise awareness and understanding. They determine key symbols and visual elements that help to communicate their message, and engage in peer editing to refine their work.	Students utilize Canva to design a visual artwork that raises awareness about this issue. They engage in peer feedback by utilizing a digital rubric in Google Docs.
Eighth Grade Physical Education	PE.3.8.12 Describes the relationship between poor nutrition and health risk factors	Students watch a video related to the topic and answer questions about the relationship between nutrition and health. They then work in small groups to develop a public health video to share their learnings.	The teacher has recorded a short video (or found one online) and is using EdPuzzle or Playposit to input formative assessment questions throughout the video. Students then work together to create their public health video using Powtoon.

THE TRIPLE E FRAMEWORK

The Triple E Framework, developed by Liz Kolb, draws on extensive research within and outside of education regarding how people learn. The framework offers practical tools to support teachers in technology integration that is focused on learning goals and instructional practices rather than specific tech tools. The framework is based on three components: Engagement in learning goals, Enhancement of learning goals, and Extension of learning goals. Central to the Triple E Framework is a reminder that "No digital tool is a magic bullet for learning… The type of tool selected is not nearly as significant as the instructional strategies a teacher creates when using the tools.[15]" Therefore, as educators, it is important to reflect on what technology is being integrated into the classroom and school, how that technology is being integrated, and most importantly why that technology is being integrated.

Foundational to the Triple E Framework is reflection on part of the educators regarding whether or not integrating technology is appropriate for the given learning goals. Educators are encouraged to use the following questions when making decisions regarding the use of technology for a particular lesson.

FIGURE 6. Triple E Framework

Engaged Learning	Does the technology allow students to **focus on the task** of the assignment or activity with less distraction? Does the technology **motivate** students to start the learning process? Does the technology cause a shift in the behavior of the students, where they move from passive to **active social learners (co-use or co-engagement)**?	**Instructional Strategies** Turn & Talk Co-Use Gradual Release Interactive Modeling I do, We do, You do Predicting Questioning Share-aloud Think, Pair and Share Guided Practice Software Tour Switcherchoo Visible Thinking Routines Monitoring
Enhanced Learning	Does the technology tool aid students in developing or demonstrating a more **sophisticated understanding** of the content? Does the technology **create scaffolds** to make it easier to understand concepts or ideas? Does the technology create paths for students to demonstrate their understanding of the learning goals in a way that they **could not do with traditional tools**?	
Extended Learning	Does the technology create opportunities for students to **learn outside** of their typical school day? Does the technology create a bridge between school learning and **everyday life** experiences? Does the technology allow students to **build skills**, that they can use in their everyday lives?	

15 Triple E Framework website: https://www.tripleeframework.com/about.html

Level 1: Engaged Learning

When considering engagement, it is important to look beyond engagement in the technology itself and toward whether or not the technology being used allows students to engage with their learning and meet their learning goals.

1. Does the technology allow students to focus on the task of the assignment or activity with less distraction (Time on Task)?
2. Does the technology motivate students to start the learning process?
3. Does the technology cause a shift in the behavior of the students, where they move from passive to active social learners (co-use or co-engagement)?

Level 2: Enhanced Learning

When considering enhanced learning, it is important that educators move beyond using technology as a substitute for a traditional instructional strategy and instead toward considering how technology can serve as a "value-add" by enhancing the learning in ways that would not be possible without technology.

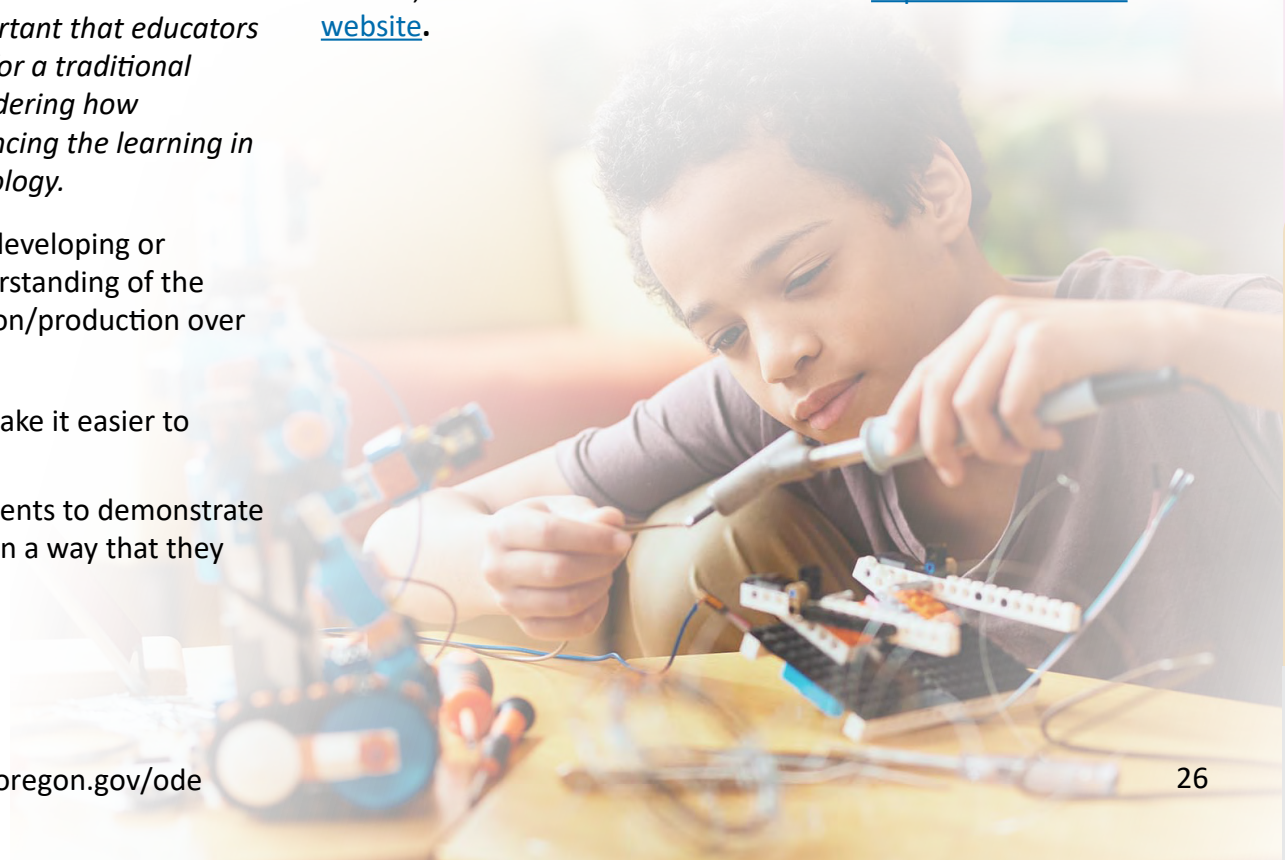
1. Does the technology tool aid students in developing or demonstrating a more sophisticated understanding of the content? (creates opportunities for creation/production over consumption)
2. Does the technology create scaffolds to make it easier to understand concepts or ideas?
3. Does the technology create paths for students to demonstrate their understanding of the learning goals in a way that they could not do with traditional tools?

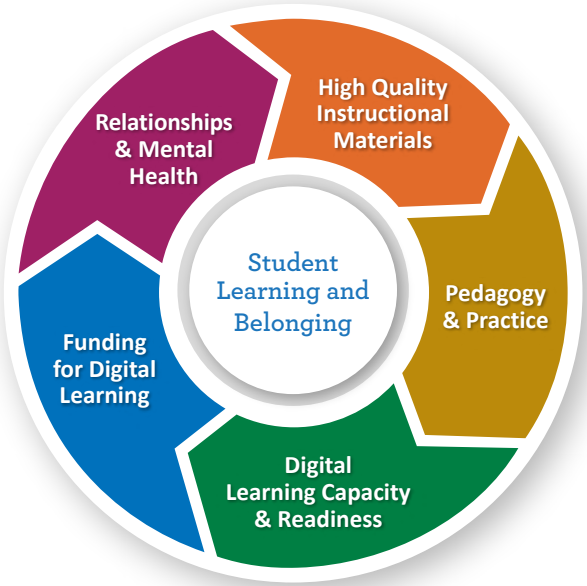
Level 3: Extended Learning

When used in equitable ways that engage the learner and enhance learning opportunities, technology has the ability to extend beyond the four-walls of the classroom. When considering extended learning, educators can reflect on how the technology can be used to create this extension outside of the typical classroom experience and toward real world connections.

1. Does the technology create opportunities for students to learn outside of their typical school day?
2. Does the technology create a bridge between school learning and everyday life experiences?
3. Does the technology allow students to build skills that they can use in their everyday lives?

Additional information, including rubrics, planning tools, case studies, and research can be found on the Triple E Framework website.





Examples of the Triple E Framework in Practice

The Key Components of Digital Learning when coupled with the Triple E Framework can provide practical reflection opportunities to put equitable technology integration into practice. The below tool can help educators reflect on the what, how, and why across three of the key components (Relationships & Mental Health, High-Quality Instructional Materials, and Pedagogy & Practice) in order to maximize learning opportunities and ensure that technology is integrated in meaningful ways tied to learning goals.

FIGURE 7. Key Components of Digital Learning

TABLE 6. Triple E Framework Examples aligned with the Key Components of Digital Learning

	Engage in Learning Goals	Enhance Learning Goals	Extend Learning Goals
Relationships & Mental Health	▪ Does the technology provide ways in which to build community? ▪ Does the technology foster a sense of belonging and safety for each student? ▪ Does the technology allow educators to partner with families to create a supportive learning environment?	▪ Does the technology enhance opportunities for students to connect with their peers in ways that would not be possible with traditional methods? ▪ Does the technology have safeguards in place to ensure that students are safe to be themselves in ways that might not be possible with traditional methods? ▪ Does the technology create new avenues for educators and families to be in partnership in ways that would not be possible with traditional methods?	▪ Does the technology offer new ways to build community beyond the four walls of the classroom? ▪ Does the technology offer new ways for students to find belonging outside of their classroom or school? ▪ Does the technology create new bridges between educators and families/caregivers allowing for a supportive learning environment that meets both student and family/ caregiver needs?

	Engage in Learning Goals	Enhance Learning Goals	Extend Learning Goals
High-Quality Instructional Materials	▪ Does the technology align with a quality core curriculum? ▪ Does the technology allow for culturally and linguistically responsive teaching?	▪ Does the technology enhance the core curriculum by creating new and equitable learning opportunities for students in ways that would not be possible with traditional methods ▪ Does the technology create additional opportunities for teachers to engage in culturally and linguistically responsive teaching that would not be possible with traditional methods?	▪ Does the technology offer students instructional materials that are connected to their everyday lives? ▪ Does the technology offer additional instructional materials to ensure that students feel seen, heard, and valued?
Pedagogy & Practice	▪ Does the technology provide ample opportunities for purposeful learning? ▪ Does the technology allow educators to center learning in students' lived experiences? ▪ Does the technology allow educators to support students' strengths and needs. ▪ Does the technology allow for educators to provide regular, timely, and meaningful feedback? ▪ Does the technology promote engagement, deeper learning, and discourse?	▪ Does the technology provide extended opportunities to make learning objectives clear and connected to students' lives in ways that would not be possible with traditional methods? ▪ Does the technology provide innovative ways to center the learning in students' lived experiences in ways that would not be possible with traditional methods? ▪ Does the technology provide increased opportunities to design intentionally around learner needs in ways that would not be possible with traditional methods? ▪ Does the technology create increased opportunities for regular, timely, and meaningful feedback in ways that would not be possible with traditional methods? ▪ Does the technology offer creative ways to promote engagement, deeper learning, and discourse?	▪ Does the technology allow for increased opportunities for learning to be tied to students' lives? ▪ Does the technology provide students with increased connections to those outside of their community in order to enhance their sense of belonging and connection with their learning? ▪ Does the technology promote engagement and discourse with authentic audiences?

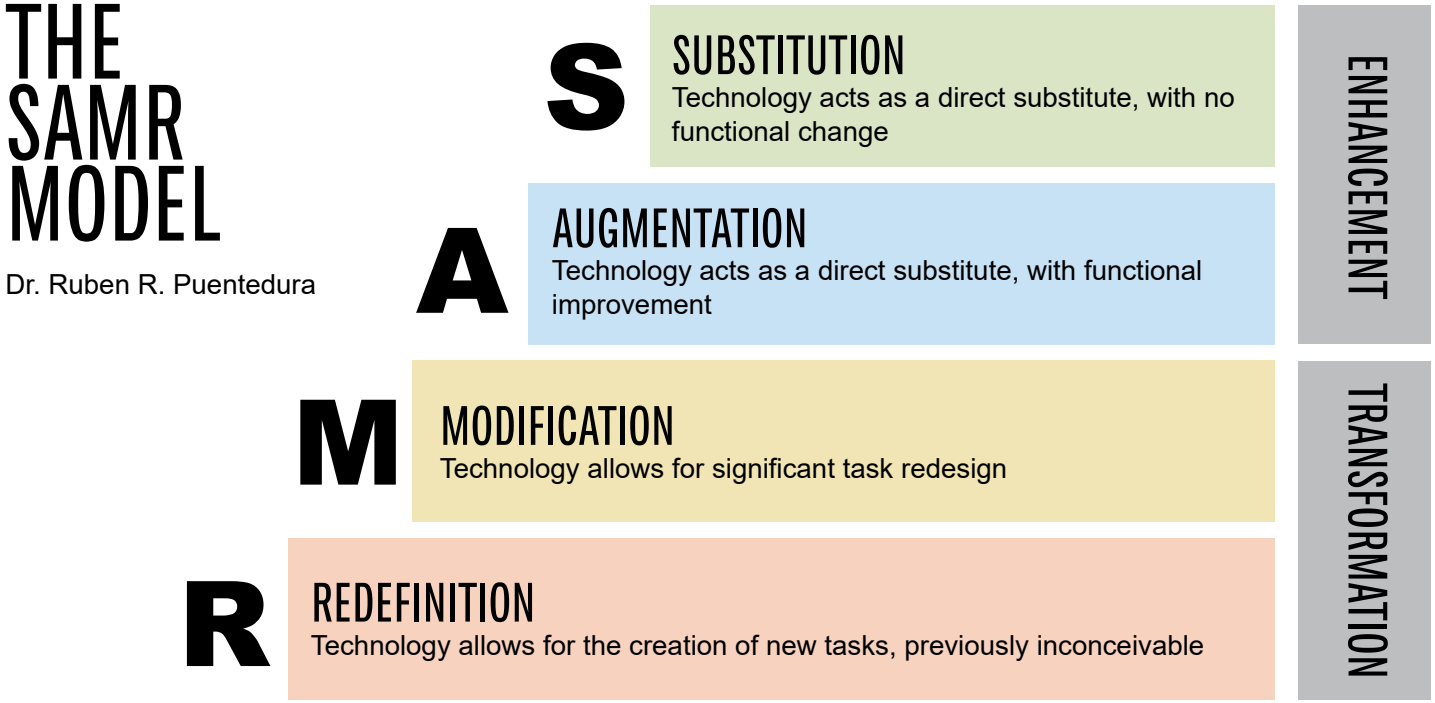
SAMR MODEL

SAMR offers educators a model to design deeper digital learning experiences for students. This model can be used to support educators in moving toward integrating technology as a strategy to increase higher order thinking and relevancy and away from integrating technology as a substitution with no functional change.

SAMR Key Questions

- What are the goals for student learning?
- What role (if any) will technology play in reaching these goals?
- If technology will be used, how will it enhance or transform learning experiences for students?
- If technology will be used, how is it embedded in a way that takes into account inclusive practices, student accessibility needs, and student data privacy policies?
- What pedagogical strategies are used to ensure that technology is used effectively?

FIGURE 8. SAMR Model



The interaction of students' relationship to technology, how teachers use and implement digital tools, and the content around which learning is designed provide opportunities to reimagine the learning experience, not just replicate traditional practices online. The below tool can provide a starting point for considering how to integrate technology in ways that move beyond substitution and toward redefining what is possible within schools and classrooms.

TABLE 7. Example of SAMR in Practice

Instructional Activity	Technology (Tech tools to Enhance Learning)			
	Substitution	Augmentation	Modification	Redefinition
Students read an informational article about a topic that is tied to the theme of the unit. Working in partners, they use a graphic organizer to identify two or more central ideas in the text and use this information to provide an evidence-based summary.	Students read the a rticle using a digital device and complete their graphic organizer on Google Docs.	Students read the article on a digital device utilizing Chrome extensions such as BeeLine Reader, Read and Write for Google, and ClaroRead. They complete their graphic organizer in Google Docs using embedded tools such as text to speech and Google Translate.	Students are given a multimedia text set based on the theme of the unit. The text set includes an article, related websites, a podcast, and a YouTube video. Students work in pairs on a shared Google Doc so that they can collaborate in real-time with one another as they explore their multimedia text set.	Using the information gathered from the topic under study, students identify a list of experts that they would like to interview in relation to the topic. Small groups of students collaborate on an email using Google Docs inviting the expert to "join" the class for a Zoom interview. Once the experts have been selected and scheduled, the class collaboratively develops questions for each expert using Google Jamboard.

PIC–RAT MODEL

The PIC-RAT Model encourages educators to reflect on two foundational questions prior to implementing technology in their classrooms:

1. What is the students' relationship to the technology? (PIC: Passive, Interactive, Creative) and
2. How is the teacher's use of technology influencing traditional practice? (RAT: Replace, Amplify, Transform)[16].

This model uses a grid-like structure to determine where teachers are with their technology integration – with the goal being to move beyond using technology solely as a replacement to traditional methods and discouraging a passive relationship between students and the technology used in the classroom. This grid can be used by teachers when lesson planning and instructional coaches and administrators during observations and coaching sessions with teachers. The below table provides a starting point for educators to consider how different technology tools are aligned with the PIC-RAT grid.

FIGURE 9. PIC-RAT Model

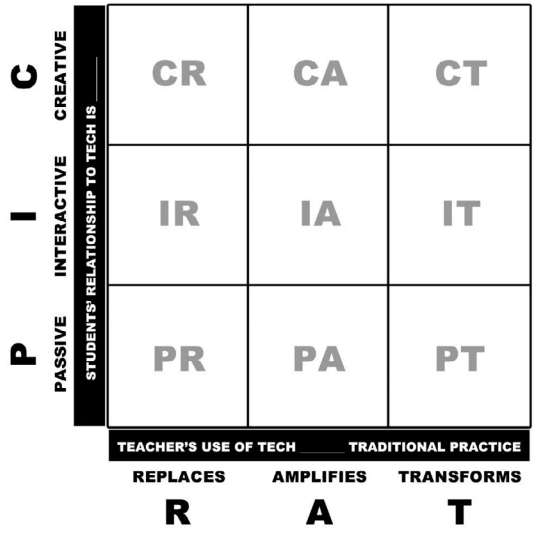


TABLE 8. Examples of PIC-RAT in Practice

C Creative	Students use Canva to create a poster of what they learned about a topic.	Students work in groups to create a Google Site to document what they learned in a unit.	Students work in small groups to create a webquest about a topic learned in class. The webquest is shared with other groups for their engagement and learning.
I Interactive	Rather than using a traditional journal, students use an online journal such as Google Docs.	A teacher creates a multimedia text set on a topic of study that includes podcasts, videos, and websites.	A teacher uses Nearpod during a class session with opportunities for student interaction and formative assessment built-in throughout.
P Passive	A teacher uses Google Slides or Powerpoint to share information during a class session	A teacher creates YouTube videos about what is being learned in class that can be reviewed by students at any time.	An expert is invited to the class to share their insight on a topic of study.
	R Replaces	**A Amplifies**	**T Transforms**

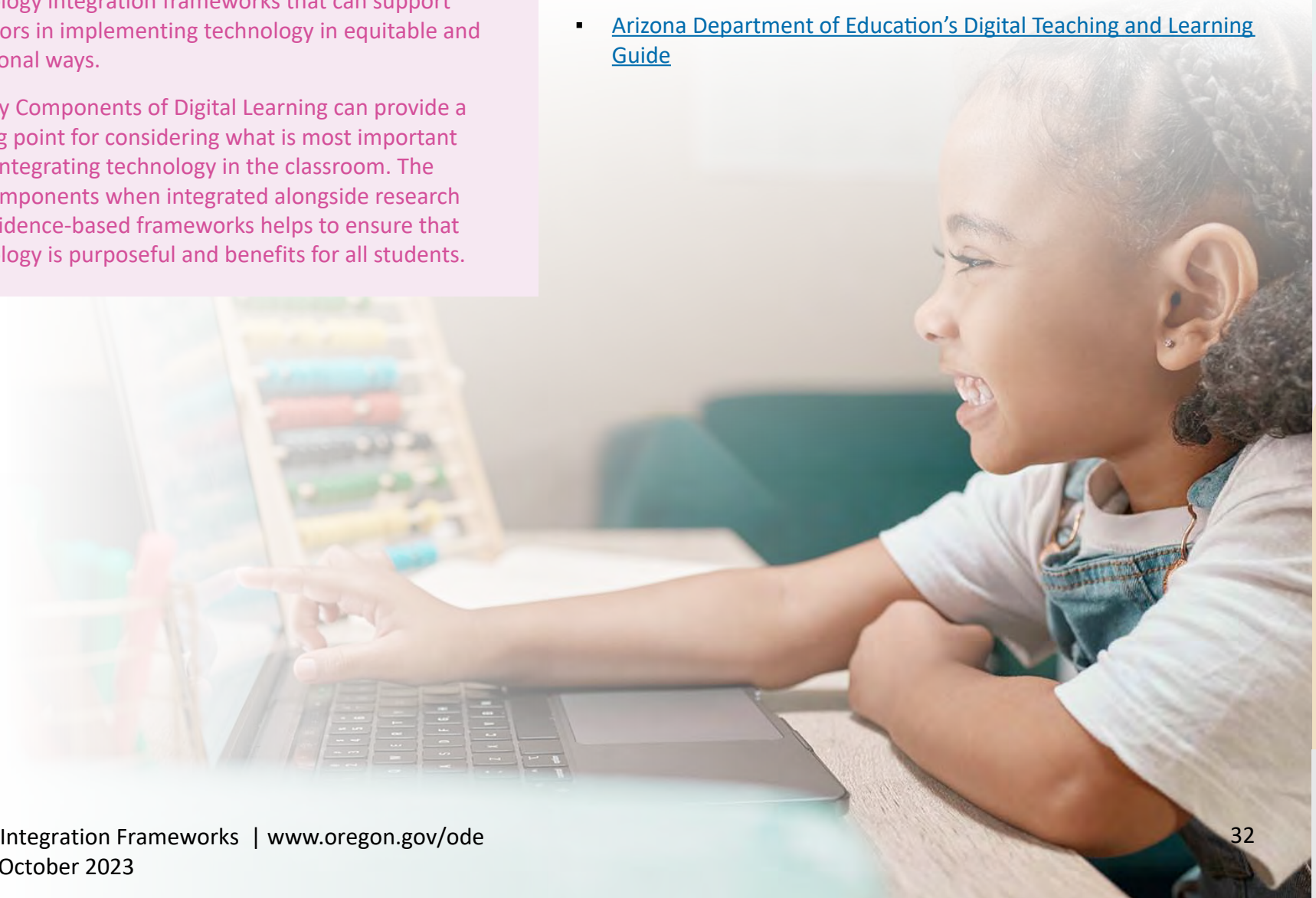
16 Questions draw from the K-12 Technology Handbook which can be accessed at: https://edtechbooks.org/k12handbook/technology_integration#h3_HRKd

TECHNOLOGY INTEGRATION FRAMEWORKS KEY TAKEAWAYS

- When integrating technology into the classroom, it is important that the content and pedagogy drive the technology being used - rather than the other way around.
- There are a number of research and evidence-based technology integration frameworks that can support educators in implementing technology in equitable and intentional ways.
- The Key Components of Digital Learning can provide a starting point for considering what is most important when integrating technology in the classroom. The Key Components when integrated alongside research and evidence-based frameworks helps to ensure that technology is purposeful and benefits for all students.

Additional Resources

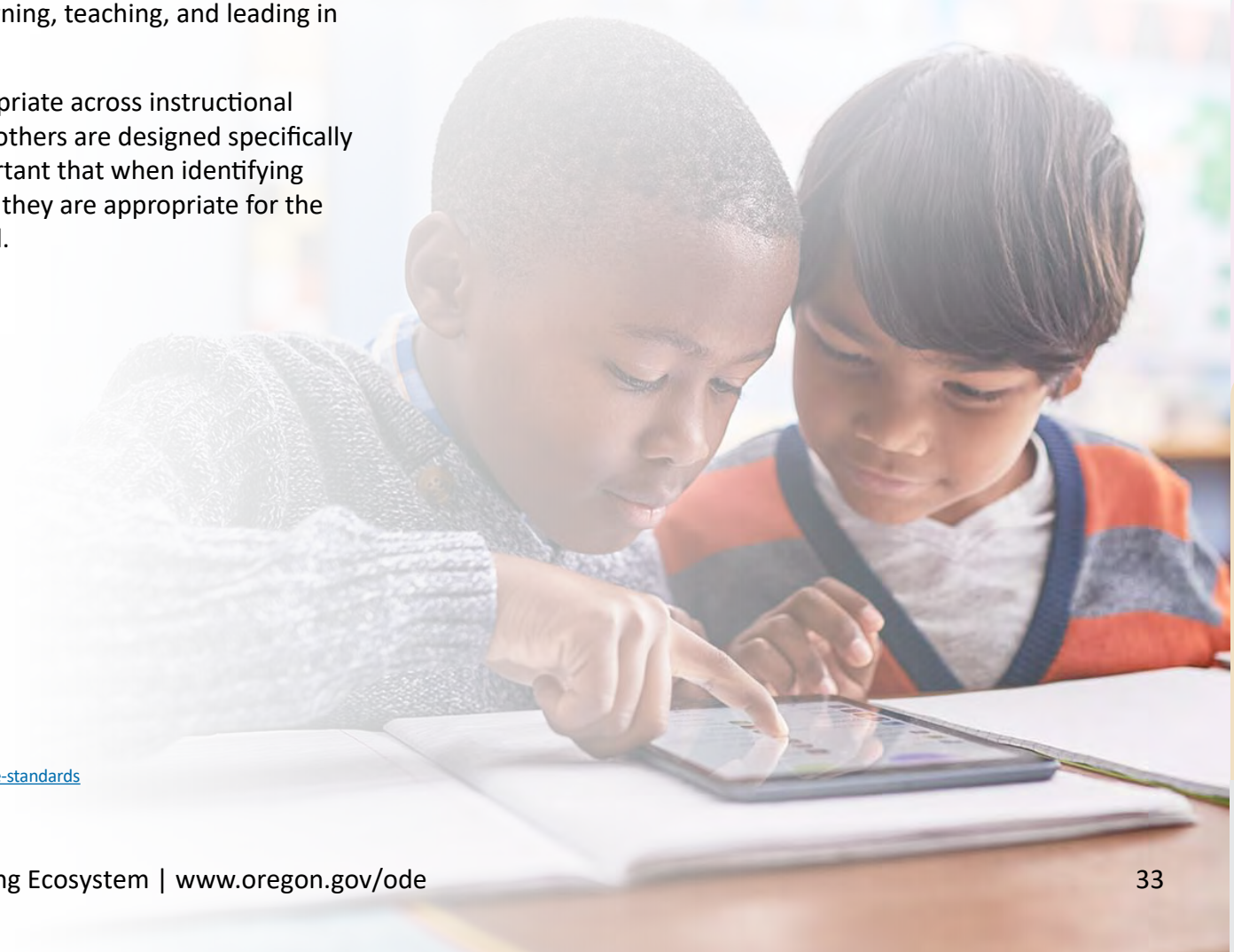
- Mississippi Department tof Education's (MDE) Digital Learning Instructional Guide.
- Ohio Department of Education's SAMR Model: Questions and Transitions
- Technology Learning Center of Illinois: Technology Integration Framework
- Arizona K-12 Center Technology Integration Matrix
- Arizona Department of Education's Digital Teaching and Learning Guide



Standards that Support a Digital Learning Ecosystem

Creating an equitable digital learning ecosystem requires designing and implementing strong instructional models and evidence based practices as well as aligning educator professional learning and student engagement with research, standards, and best practices. While Oregon does not have digital learning standards, there are several national organizations that schools and districts can look to for support with determining the "competencies for learning, teaching, and leading in the digital age."[17]

While some of the standards are appropriate across instructional models (in-person, hybrid, and online) others are designed specifically for online learning. It is therefore important that when identifying standards there is care in ensuring that they are appropriate for the instructional model being implemented.



17 The ISTE Standards Website: https://www.iste.org/iste-standards

DIGITAL LEARNING STANDARDS FOR ALL INSTRUCTIONAL MODELS

International Society for Technology in Education (ISTE) provides educators with evidence-based professional learning, virtual networks, thought-provoking events and the ISTE Standards. The ISTE standards support educators and students across instructional models (in-person with blended learning, hybrid learning, and online/remote learning).

ISTE Standards: Educators

The educator section of the ISTE Standards provides a road map to helping students become empowered learners. These standards will deepen your practice, promote collaboration with peers, challenge you to rethink traditional approaches and prepare students to drive their own learning.

ISTE Standards: Students

Today's students must be prepared to thrive in a constantly evolving technological landscape. The student section of the ISTE Standards is designed to empower student voice and ensure that learning is a student-driven process.

SPOTLIGHT ON BEAVERTON SCHOOL DISTRICT

In the Beaverton School District, educators integrate digital citizenship skills for students in grades 6-12 into report cards. Students receive feedback on a behavioral learning target specifically focused on digital citizenship, which aligns with the International Society for Technology in Education (ISTE) standards. The behavior learning target grade does not impact academic course grades, however, it does communicate and evaluate essential behaviors and practices. By incorporating digital citizenship into report cards, Beaverton Schools are hoping to promote the learning of critical skills needed for success in navigating our digital world.

SPOTLIGHT ON ISTE STANDARDS WITH CCSS CONNECTIONS

As demonstrated in the TPACK framework, content standards drive learning with technology serving as an enhancement to the content and pedagogical approach. Therefore when implementing technology, beginning with the content standards helps to ensure that the content is driving the instruction rather than technology or digital tool. The Washington Office of Superintendent of Public Instruction Educational Technology Learning Standards Resource includes connections between the CCSS (Common Core State Standard) and the ISTE Standards which can provide a starting point for planning. You can view these resources on their website.

ISTE Standards: Educational Leaders

The education leaders section of the ISTE Standards supports the implementation of the ISTE Standards for Students and the ISTE Standards for Educators, and provides a framework for guiding digital age learning. These standards target the knowledge and behaviors required for leaders to empower teachers and make student learning possible. The standards are focused on some of the most timely, yet enduring, topics in education today – equity, digital citizenship, visioneering, team and systems building, continuous improvement and professional growth.

ISTE Standards: Coaches

The coaches section of the ISTE Standards is your road map to the characteristics, activities, philosophies and dispositions of today's instructional technology coaches, as well as those needed for future practice in this evolving role. Because coaches have a unique role as capacity builders and implementation experts, these standards guide coaches in ensuring that learning with technology is high impact, sustainable, scalable and equitable for all. The result is a section that helps define the role of the coach and shows how that role relates to those addressed in the ISTE Standards for Students, Educators and Education Leaders.

STANDARDS FOR ONLINE INSTRUCTIONAL MODELS

As online learning has continued to expand, several organizations have developed standards in an effort to support strong online teaching and course development. Two such organizations include the National Standards for Quality Online Learning (NSQ) which provide standards for online teaching and program and course development and the International Association for K-12 Online Learning (iNACOL) national standards for quality online courses. These standards are designed to support school and district leaders in designing quality online learning experiences for students engaging in online and remote learning as well as hybrid learning.

National Standards for Quality Online Learning

The National Standards for Quality (NSQ) Online Learning are aligned with Quality Matters and are designed to support the development of quality online courses in ways that take into account learner needs and high quality teaching and instruction.

The NSQ standards are broken down into several categories: Online Teaching, Online Programs, and Online Courses with each set of standards providing a set of indicators for educators and education leaders to use when designing learning opportunities for students.

In addition, the NSQ offers a database of resources that highlights standards in practice and informational materials tied to each set of standards in addition to Professional Development Opportunities aligned with the NSQ standards.

National Standards for Quality Online Courses

The National Standards for Quality Online Courses provide guidelines and rubrics for districts and schools designing new online courses or evaluating existing online courses. The resources provide a starting point for online school leaders and educators to create shared language regarding the development of online courses aligned with course content, instructional design, student assessment, technology, and course evaluation and support.

STANDARDS THAT SUPPORT A DIGITAL LEARNING ECOSYSTEM KEY TAKEAWAYS

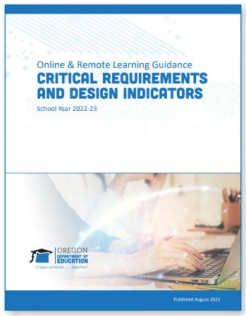
- Adopting and integrating standards developed by national organizations such as ISTE or the NSQ can help schools in identifying the knowledge and skills students need to be digitally literate.
- Supporting educators in understanding the skills and knowledge that students need while building their own skills is important when creating a strong and equitable digital learning ecosystem.

Additional Resources

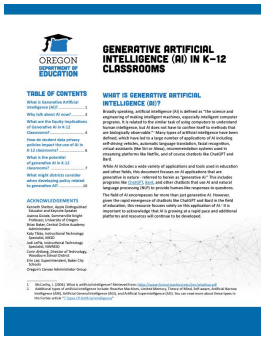
- A Framework for Technology Integration: One School's Approach (International Literacy Association)
- Create Meaningful Learning Experiences Using the ISTE Standards
- Washington Office of Superintendent of Public Instruction Educational Technology Learning Standards

DIGITAL LEARNING AND EDUCATIONAL TECHNOLOGY GUIDANCE DOCUMENTS

Key Components of Digital Learning: This resource provides information regarding instructional design and pedagogical approaches to imple-menting digital learning and integrat-ing technology. The Key Components include: Relationships and Mental Health, Pedagogy and Practice, High Quality Instructional Materials, Digital Learning Readiness and Capacity, and Funding for Digital Learning.



Online and Remote Learning Guidance: This guidance uplifts the most crucial policies to attend to when designing a school or program that uses an online or remote instructional model. The guidance is organized using three pillars: Lead and Design for Equity, Create Relational Conditions for Learning, and Implement Inclusive Instruction.



Generative Artificial Intelligence (AI) in K-12 Classrooms is designed to provide Oregon's educators and educational leaders with resources and tools to learn about the possibilities for using AI in the classroom, potential equity implications, instructional uses, and tools and resources for developing policies related to use of AI.

Planning Guide for Short-Term Distance Learning: This resource supports schools and districts in preparing for sustained learning regardless of circumstances (e.g., floods, wildfires, earthquakes, building damage, inclement weather, or public health events).

Planning Guide for Long-Term Distance Learning: This guide is intend-ed to support schools and districts in preparing for an alternative to in-person learning when the con-ditions of a prolonged emergency make it unsafe or unadvisable for students/educators to be on-site for an extended period of time.

Additional Resources

- Digital Instructional Materials: Requirements and Recommendations
- Developing Policy and Protocols for the use of Generative AI in K-12 Classrooms
- Resources for the Educational Use of Generative AI in K-12 Classrooms

External Resources

- Reimagining the Role of Technology in Education: 2017 National Education Technology Plan Update (The Office of Education Technology)
- Advancing Digital Equity for All: Community-Based Recommendations for Developing Effective Digital Equity Plans to Close the Digital Divide and Enable Technology-Empowered Learning (The Office of Education Technology
- Building Technology Infrastructure for Learning (The Office of Education Technology)
- 2022 State of Ed Tech Trends Report (SETDA)

Appendix A: Key Terms

Key Term	Definition
Asynchronous	Flexible non-simultaneous approaches using audio, video, and learning platforms. Key to the definition of asynchronous is that there is limited or no opportunity for interaction between the staff and the student that occurs in or near real time.
Backward Design	Backward design prioritizes end goals and intended learning outcomes prior to designing steps and strategies to meet those end goals and intended learning outcomes (Wiggins and McTighe, 2005).
Bichronous	Intentional blend of both synchronous and asynchronous learning where students can participate in anytime, anywhere learning for portions of their learning with other portions including same time and same space learning.
Blended Learning	Blended learning is a pedagogical approach that combines non-digital and digital instructional methods. Blended learning focuses on teaching and instruction. A blended learning pedagogical approach includes flipped classroom, station rotation, and individual rotation which allows students to work at their own pace through the use of educational technology.
Digital Learning	Digital learning refers to "any instructional practice that effectively uses technology to strengthen a student's learning experience and encompasses a wide spectrum of tools and practices," as defined in ESSA (Every Student Succeeds Act). This is a comprehensive definition which includes the use of technology and practices across all instructional models, from in-person to fully online learning environments.
Digital Literacy	Digital literacy refers to "...the ability to use information and communication technologies to find, evaluate, create, and communicate information, requiring both cognitive and technical skills." (American Library Association). Further, "...digital literacy (with skills defined in the Learning for Justice Digital Literacy Framework) is the need to provide educators strategies to build on the skills students need in today's digital world; skills that are cross-cutting across content areas and are important in all areas including, but not limited to, communication skills, critical thinking, analysis and evaluation of media (critical media literacy), digital citizenship, etc.

Key Term	Definition
Digital Tools	Any technology-based content, app, software, extension, website, or platform intentionally selected to promote student learning in multiple ways (e.g., accessibility, creativity, critical thinking, communication, collaboration,engagement, assessment, etc.).[18]
Hybrid Instructional Model	A hybrid instructional model is an educational approach where learning occurs both in-person and online. A hybrid instructional model is less of a pedagogical approach to teaching and rather a way in which to structure learning and schedule instructional opportunities.
Online Instructional Model	An online instructional model is defined as instruction in which students and teachers are separated by time and/or location and interaction occurs via computers and/or telecommunications technologies. Online learning is an instructional approach where all learning occurs online through both synchronous and asynchronous instruction.
Remote Learning	Generally, any educational model of instruction where the student and the teacher are not in the same physical location for more than half of the instructional time.
Synchronous	Simultaneous interactions either in person or through the use of an interactive technology. This may include audio only, video only, or audio and video. Key to the definition of synchronous is the opportunity for interaction between the educators and students that occurs in or near real time, allowing for feedback and adjustments.

18 Mississippi Department of Education. Digital Learning Instructional Guide. https://www.mdek12.org/sites/default/files/Offices/MDE/OTSS/DL/dl_instructional_guide_final.pdf

Appendix B: Key Components of Planning Across Instructional Models

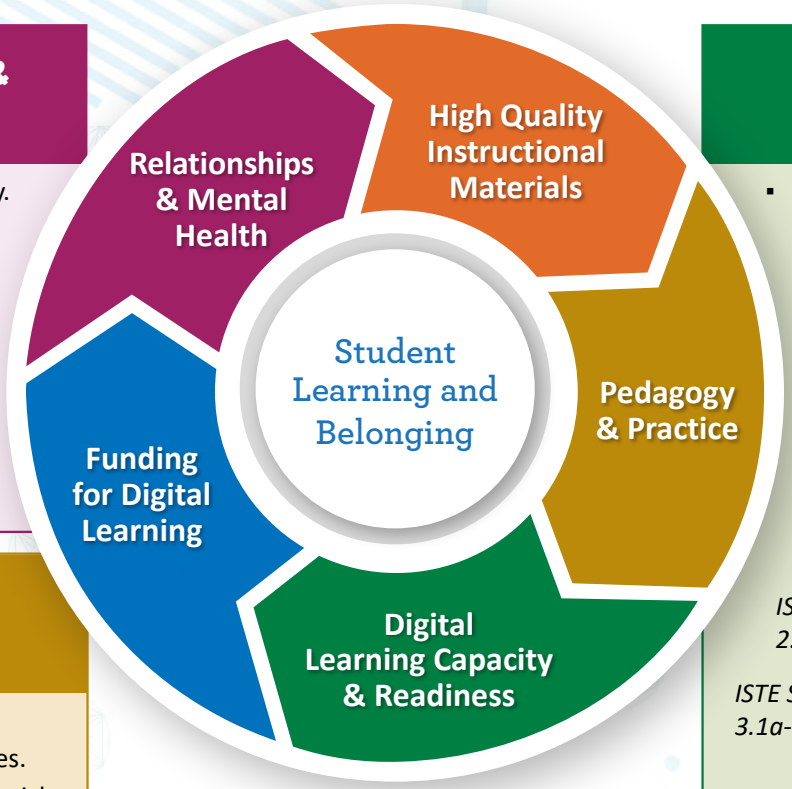
Educators and education leaders are encouraged to use this tool alongside the Key Components of Digital Learning. This tool can be used for planning purposes or evaluating current program models. This tool is not designed to be used in its entirety, rather educators and education leaders should choose the component that they want to focus on within their community and engage in dialogue around the questions to identify bright spots and opportunities to plan for continuous improvement.

Key Component	Description	Key Characteristics & Sample Questions
Relationships and Mental Health	The school creates intentional structures to support the cultivation of relationships and the mental health of students and staff for both in-person and remote learning spaces.	**Create structures to build community.** ▪ *How is collaboration and interaction with peers and teachers maximized in both in-person and remote learning settings?* ▪ *How are informal and personalized learning structures created for students to connect with educators both in-person and online in order to increase opportunities for relationship building?* **Foster a sense of belonging and safety for each student.** ▪ *How is care and connection being leveraged in all instructional settings?* ▪ *How are digital learning tools leveraged to strengthen relationships and develop connections with and between students and families both when in-person and when learning remotely?* ▪ *How are safe and welcoming learning spaces being developed and maintained across instructional settings?* **Partner with families to create a supportive learning environment.** ▪ *How is an inviting learning space being co-created with families both when in-person and when in remote learning settings?* ▪ *How are consistent, comprehensive and transparent multilingual channels of communication created with families' home language and culture are honored?* **Support staff which is essential to supporting students.** ▪ *What structures are in place to cultivate a school culture that puts action behind its commitment to teacher health and belonging?* ▪ *What opportunities are provided to school staff to build relationships and connections?*
High Quality Instructional Materials	The school evaluates the instructional materials used in both in-person and remote settings in order to ensure that all instructional materials are high quality and culturally responsive.	**Determine a quality core curriculum.** ▪ *How are resources leveraged that can support the evaluation of digital instructional materials (e.g.* Quality Matters Resources *and* Digital Instructional Materials: Requirements and Recommendations)? **Focus on culturally and linguistically responsive teaching.** ▪ *How do the instructional materials used in both in-person and remote learning settings provide "mirrors" reflecting students' own worlds and "windows" into the history, traditions, and experiences representative of a wide range of cultures and groups?* ▪ *How are the instructional materials used in both in-person and remote learning settings evaluated to ensure they do not perpetuate stereotypes or fail to represent certain identity groups?*

Key Component	Description	Key Characteristics & Sample Questions
Pedagogy and Practice	The school creates learning conditions in both in-person and remote learning grounded in research-based pedagogies and the funds of knowledge of students, families, and caregivers.	**Design for purposeful learning.** ▪ *How are learning objectives made clear and focused within each lesson whether through an in-person blended learning instructional model, a hybrid instructional model, or an online instructional model?* ▪ *How is technology being simplified by choosing a few consistent learning platforms and providing support and resources to staff, students, and families?* **Center in students' lived experiences.** ▪ *How is the learning no matter the instructional model built from student funds of knowledge?* ▪ *How is the learning no matter the instructional model providing essential learning activities that are culturally relevant, meaningful, and aligned to grade level or above academic content standards?* ▪ *How are digital tools and online learning used to promote more opportunities for multicultural, social justice, and culturally responsive education in both in-person and remote learning settings?* **Use digital tools and instructional materials to support students' strengths and needs.** ▪ *How are digital tools leveraged to support students with disabilities and students who are emergent bilingual?* ▪ *How are learner-centered lessons with varied teaching methods and strategies and differentiated materials being leveraged no matter the instructional model?* ▪ *How are digital tools being leveraged to provide accessibility tools in digital instructional materials and online assessments?* **Ensure regular, timely, and meaningful feedback.** ▪ *How are success criteria across instructional models being developed and communicated?* ▪ *How are frequent low-stakes formative assessments being leveraged across instructional models in order to understand and sustain student motivation and active engagement.* **Promote engagement, deeper learning and discourse.** ▪ *How are a variety of lesson designs strategically incorporated across instructional models to engage students and ensure a high level of engagement and deep learning?*

Key Component	Description	Key Characteristics & Sample Questions
Digital Learning Readiness and Capacity	The school engages in backward design in order to determine how to provide all students and staff with the tools and technical support needed to be successful in both in-person and remote learning settings.	**Design backwards for long-term sustainability and systems-level change.** ▪ *How is backward design being leveraged to ensure alignment between technology purchases and readiness and the instructional and social-emotional belonging of students and staff?* ▪ *How are IT staffing and training planned based on what is needed to both maintain devices and provide technical assistance to staff, students, and families?* **Ensure access to the technology and connectivity needed for learning.** ▪ *What process is in place to provide staff and students adequate devices and internet connectivity?* ▪ *How are federal supports being leveraged to ensure access to technology for students and staff (see Key Components of Digital Learning, Funding for Digital Learning)* **Provide device options that meet minimum requirements to access the tools and platforms.** ▪ *How are device roll-out and procedures structured in order to ensure that learning happens in both in-person and remote learning settings?* ▪ *How does the LMS (Learning Management System) that is selected keep track of learning progress for students that are learning in-person and in remote learning settings?* **Provide training to staff, students and families around student data privacy and cybersecurity.** ▪ *How is professional learning structured that trains all staff on the federal and state statutes protecting students and their information?* ▪ *What vetting process will be developed/continued in order to ensure that all digital tools meet federal privacy and security obligations for classroom and home use Student Data Privacy Consortium?*
Funding for Digital Learning	The school leverages creativity and innovation when considering how to fund digital learning initiatives for both in-person and remote learning settings.	**Use federal funds to support digital learning efforts.** ▪ *How are federal funds invested to support the strengths and needs of students who are historically underserved by the system?* ▪ *Are the use of funds in alignment with district goals and activities to enhance student learning and well being?* ▪ *In what creative ways are federal funds allowing for additional access and opportunity for students? Federal funds can be used to pay for transportation to and from learning centers including schools, CBO sites, and others.* ▪ *How are new flexibilities maximizing new opportunities to provide services that previously may not have been available to students?* ▪ *How can federal funds be braided with both other federal and state funding to bolster additional learning opportunities, targeting students who may benefit most from additional learning and social connection?*

Appendix C: Key Components of Digital Learning One-Pager



CENTER RELATIONSHIPS & MENTAL HEALTH

- Create structures to build community.
- Foster a sense of belonging and safety for each student.
- Partner with families to create a supportive learning environment.
- Supporting staff tis essential to supporting students.

ISTE Standard for Educators: 2.3a, 2.4ba-c

DIGITAL LEARNING CAPACITY & READINESS

- Design backwards for long-term sustainability and systems-level change.
  - Ensure access to the technology and connectivity needed for learning.
  - Provide device options that meet minimum requirements to access the tools and platforms.
- Provide training to staff, students, and families around student data privacy and cybersecurity.

ISTE Standards for Educators: 2.2a, 2.2b, 2.3c, 2.3b

ISTE Standards for Education Leaders: 3.1a-d, 3.4a-d

PEDAGOGY & PRACTICE

- Design for purposeful learning.
- Center in students' lived experiences.
- Use digital tools and instructional materials to support students' strengths and needs.
- Ensure regular, timely, and meaningful feedback.
- Promote engagement, deeper learning and discourse.

ISTE Standard for Educators: 2.1a-c, 2.3b, 2.5a-c, 2.6a-d, 2,7a-c

ISTE Standards for Education Leaders: 3.2a-d, 3.3a-e

FUNDING FOR DIGITAL LEARNING

- Use federal funds to support digital learning efforts.

ISTE Standards for Education Leaders: 3.4a-b

HIGH QUALITY INSTRUCTIONAL MATERIALS

- Determine a quality core curriculum.
- Focus on culturally and linguistically responsive teaching.

ISTE Standards for Educators: 2.2c, 2.4d, 2.5a, 2.7a

Appendix D: Technology Considerations for Formative Assessment

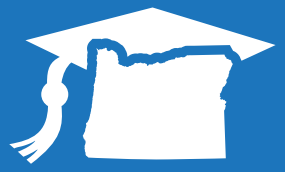
This table is designed to support educators in thinking intentionally about how to integrate formative assessment across instructional models by reflecting on ways in which technology can deepen formative assessment practices. Educators are encouraged to work through each dimension of this table and reflect on the questions by making connections to current practice and developing strategies and goals moving forward.

Dimension	What does this mean?	Things to consider	Technology Integration Reflection Questions

Dimension 1: Clarify Learning Goals and Criteria for Success	▪ Determine Learning Goals, or what students will know by the end of the lesson. Goals describe "big ideas" or concepts and reflect academic standards. Learning goals are written in student-friendly language, beginning with, "I understand..."
	▪ Establish Success Criteria, or the evidence teachers and students use to determine how students are progressing toward learning goals. They are also written in student-friendly language, beginning with, "I can..."
		▪ Use the Backward Design process, through which instructional activities and strategies are framed around these learning goals.
		▪ Use a learning progression rather than just grade-level standards to plan instruction.
		▪ While learning goals typically center around the concepts and skills of standards, success criteria can embed components of SEL. Some examples include:
		  ▪ I can ask a question of a classmate.
		  ▪ I can identify when I feel "stuck" and can choose from my list of tools one way to get "unstuck".
		  ▪ I can connect with a family member, caregiver, or friend and describe one big idea I learned today.
			▪ In what ways can technology be used in order to support the development of learning goals? *For example, generative AI tools such as ChatGPT can provide support with this process.*
			▪ How might digital tools provide the support for developing learning progressions? *For example Achieve the Core's Coherence Map Tool helps connect concepts and skills across grade levels.*
			▪ Are there opportunities to use technology to support students' social emotional learning? *For example, programs like Classroom WISE and additional resources such as those developed by CASEL can support educators in thinking deeply about how to leverage instructional practices that effectively use technology to:*
			  ▪ *strengthen a student's knowledge, skills, and attitudes to develop healthy identities;*
			  ▪ *manage emotions and achieve personal and collective goals;*
			  ▪ *feel and show empathy for others; establish and maintain supportive relationships;*
			  ▪ *and make responsible and caring decisions.*

Dimension	What does this mean?	Things to consider	Technology Integration Reflection Questions
Dimension 2: Elicit Evidence of Student Learning	▪ Engage in a learning event or activity that prompts and generates evidence of learning. Evidence should be tightly aligned to the learning goals and guided by success criteria. ▪ Consider student needs and interests when deciding how to elicit evidence so that students can demonstrate their understanding in different ways to meet the success criteria. Use multiple sources of evidence to draw accurate conclusions about student learning.	▪ Intentionally engage students with tasks or activities that require them to show their thinking. Limit or avoid tasks that require only an answer without an opportunity to explain thinking or connect concepts. ▪ Use the Smarter Content Explorer or Sample Items Database to find and adapt tasks that are aligned to learning goals and standards. ▪ Quality tasks matter more than quantity of tasks. ▪ Try out some of the 56 Ways to Gather Evidence of Student Achievement. ▪ If the criteria for success are clear as guardrails, students should have agency to determine how they show what they know and can do.	▪ How can technology be used to gather evidence of student learning in real-time? *For example, using tools like Formative, Socrative, Nearpod, Pear Deck, and Flip allow teachers to elicit evidence of student learning in real-time.* ▪ How can the power of technology be leveraged to measure what matters and use assessment data to improve learning? *For example, how can technology support next generation assessment through the development of assessment practices that are timely, accessible, and adaptive, with real-time feedback? The Office of Educational Technology provides ideas and strategies in Measuring for Learning.* ▪ How can digital tools be used to collect evidence of learning over time using multiple formats? *For example, tools such as Nearpod, Pear Deck, Socrative, Flip, or podcast creation tools allow for various ways for students to share what they know and can do. Additionally, tools such as Google Jamboard, Mindmeister, and Padlet can provide opportunities to elicit evidence of learning in interactive ways.*

Dimension	What does this mean?	Things to consider	Technology Integration Reflection Questions
Dimension 3: Interpret Evidence to Determine Next Steps	▪ Review evidence to determine students' progress toward learning goals and success criteria. Interpreting is about using evidence to identify the gap between where students are and where they need to be. ▪ Students can analyze evidence of their own learning and discuss with teachers and peers. ▪ Interpreting evidence is not a single event, but part of an ongoing process throughout instruction.	▪ Interpreting evidence is a valuable skill for students' post-secondary readiness and often aligns to specific standards and practices. Teaching students to interpret evidence is worth the instructional time investment. ▪ While much of this interpretation happens "on the fly," educators must anticipate student thinking as part of their planning process. ▪ What questions might unlock student thinking? ▪ What whole-class discussion might need to happen, and with what focus? ▪ Are examples and artifacts of student work needed?	▪ How can technology be used to interpret and analyze student learning? For example, using tools like Formative, Nearpod, Pear Deck, and Flip analyze patterns of student learning that educators can use to determine next steps. Additionally, tools such as Google Jamboard, Mindmeister, and Padlet allow for teachers to see patterns across students within a class. ▪ How can digital tools such as rubrics be leveraged to ensure that evidence of student learning is timely and consistent? *For example if using Canvas, Google Classroom, or Seesaw, there are built-in rubrics to support interpretation of student work. Other tools such as* Rubric Maker *and* Rubistar *can support the creation of rubrics.*
Dimension 4: Act by Providing Feedback and Adjusting Instruction	▪ Teachers determine and initiate appropriate instructional next steps. These may not be the same for all students and must take into consideration each student's readiness, interests, and learning preferences. ▪ Students receive feedback that is specific about what they need to do next in the learning process.	▪ A positive, collaborative culture must be in place between educators and students for feedback to be most meaningful and effective. ▪ Students must receive feedback that is descriptive, actionable, and timely. ▪ Utilizing peer feedback routines can substantially increase the amount of feedback each student receives. ▪ A number of online tools make verbal and video feedback easy to give and receive.	▪ How can digital tools be used in order to leave specific comments, link student-specific resources, and provide real-time feedback to students about progress and understanding? *For example, if using Canvas, Google Classroom, or Seesaw, educators can provide specific, real-time feedback to students – often in various formats e.g written or oral.*



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