



TOOLKIT: PLANNING AND DELIVERING ONLINE INSTRUCTION FOR K-12 STUDENTS DURING COVID-19 SCHOOL CLOSURES

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INTRODUCTION

As of this writing, all 50 states, the District of Columbia, Puerto Rico, Guam, and the U.S. Virgin Islands have reported cases of the coronavirus disease 2019 (COVID-19), and 46 states, the District of Columbia, and Puerto Rico have instituted jurisdiction-wide public school closures.¹ Some experts even anticipate that school closures will extend to what would have been the conclusion of the 2019-20 school year.² At this time, the Centers for Disease Control and Prevention (CDC) have issued guidance that U.S. districts, schools, and teachers ensure “continuity of learning” by implementing online and distance learning plans while schools remain closed.³

The evolving pandemic and expanding school closures have forced teachers, many with no prior experience teaching online, to quickly adapt face-to-face instruction to alternative formats.⁴ At the same time, issues with home internet access, device availability, and serving specialized student populations (e.g., students with disabilities, English learners) have further complicated the transition to online instruction.⁵ However, the current situation “means [that], ready or not, schools will have to try to figure out online education.”⁶

At this juncture, it is most important that teachers do their best given the tools available to them and remember that, despite the isolation of teaching online, colleagues and school systems should still be available to provide support.⁷ Understanding the implications of this new reality, Hanover Research has synthesized this toolkit to support teachers in adapting to online platforms and the novel considerations for planning, instruction, and assessment that accompany them.⁸

OVERVIEW

This toolkit:

- ✓ Describes strategies to [determine the availability and capabilities of online instructional resources](#), both resources provided via a state or local education agency and open educational resources;
- ✓ [Reviews effective pedagogies and instructional practices](#) that are essential for achieving success in an online learning format, regardless of grade level or subject area; and
- ✓ Presents [an inventory of open educational resources and additional best practice guidance on online instruction](#) to supplement the material contained in this toolkit.

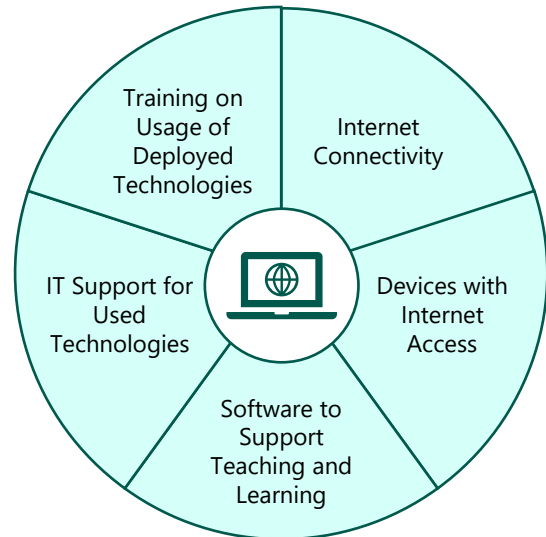
AUDIENCE

This toolkit is designed to support K-12 teachers who have been asked to teach students via online or distance learning due to school closures resulting from the COVID-19 pandemic. The toolkit provides strategies and tools to assist teachers who are new to online teaching, as well as those with past experience.

IDENTIFY TOOLS TO SUPPORT ONLINE INSTRUCTION

Before planning or delivering instruction in an online format, teachers should identify and understand the capabilities of the resources and technologies they can use to support online instruction, either through a subscription purchased by their district or school or through open educational resources.⁹ This includes teachers knowing which technologies and resources are available for them to create, publish, and manage online coursework and for students to access digital or distance learning materials and complete learning tasks.¹⁰ Without understanding available resources, teachers risk planning instruction that cannot be supported by existing hardware and software.¹¹ At the same time, knowledge of available digital content, instructional software, and hardware is essential for developing activities that best utilize these resources and support student success.¹²



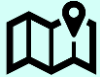
Basic Requirements for Online Instruction




Source: eSchool News¹³

In particular, teachers should familiarize themselves with the skills they and their students will need to use specific technologies.¹⁴ All users must be able to operate the available devices and digital platforms and applications for online learning to be effective.¹⁵ Issues with access and operation of digital technologies are multifaceted, and teachers should determine the potential benefits of using a given technology while also anticipating and acknowledging the challenges that may arise when planning and delivering instruction online.¹⁶

Challenges to Teaching and Learning Online

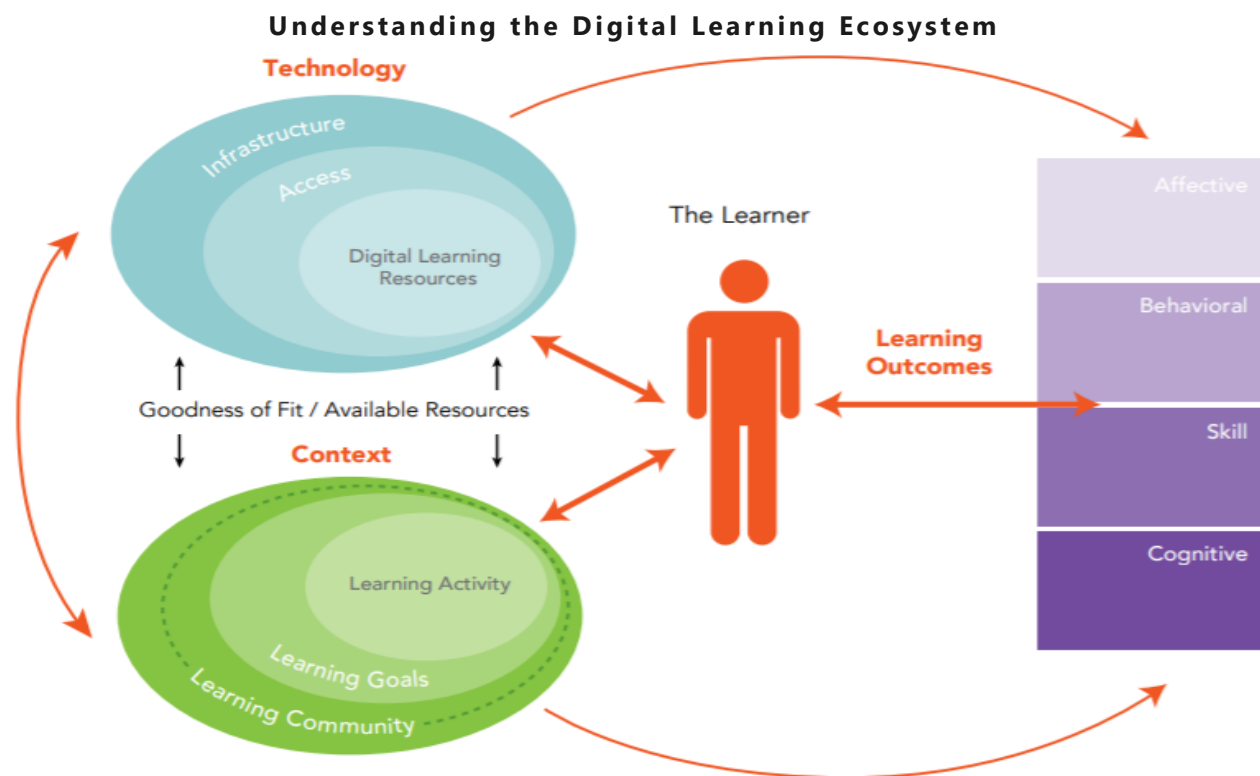
CHALLENGE	DESCRIPTION
 <p>Knowledge and Comfort Using Technology</p>	Teachers and students may be unfamiliar with a digital platform or application, resulting in difficulty accessing content and completing tasks—at least initially. To mitigate these concerns, teachers should seek training and advice from colleagues on using available resources. Teachers also should provide students with clear and specific directions for using adopted technologies and digital resources.
 <p>Need to Redesign Curriculum</p>	Teaching and learning online differs significantly from in-person instruction, necessitating modification of pedagogies (e.g., assessment) and learning tasks (e.g., individual assignments). As such, teachers should consider the capabilities of those tools they and their students have at their disposal and how those tools support content and skills in the target subject or grade level.
 <p>Presentation of Directions and Content</p>	Like the regular classroom environment, teachers will need to accommodate a variety of learning styles and needs via online instruction. Thus, they should clearly communicate expectations and directions for student work and present content in several ways (e.g., video, audio, text, interactive media) and via multiple iterations.

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CHALLENGE	DESCRIPTION
 <p>Facilitation of Learning</p>	<p>Teachers will be unable to directly oversee students' work—unless they have access to and require live video or audio conferencing. Consequently, monitoring student understanding and maintaining on-task learning time can be challenging. Establishing mechanisms for student-to-student interaction (e.g., discussion forums) and providing formative and summative feedback at critical junctures in the learning process are vital to success.</p>

Source: Multiple¹⁷

Evaluating students' ability to understand digitized curricula and participate in online instructional activities—both in logistical terms (e.g., internet connectivity) and technological skills (e.g., navigating digital platforms)—is integral to successful online instruction.¹⁸ Such considerations encompass supporting student needs in a variety of areas, including how to address differences in their cognitive and social-emotional development and their individual and cultural backgrounds.¹⁹ Relatedly, teachers must consider how to support special student populations such as English learners and students with disabilities.²⁰



Source: Stanford Center for Opportunity Policy in Education and Alliance for Excellent Education²¹

A number of digital applications, online platforms, and other technologies may be available to teachers and students depending on the resources provided by their district and school and the investments made by families in in-home technologies. In other words, teachers and their students may have access to a wealth of online tools and resources, or teachers and their students may have more limited options for digital instruction.²² Consequently, it is helpful for teachers to brainstorm how they can use a variety of resource types—subscription-based and open-source—to support student learning.²³

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Categories of Online Teaching and Learning Technologies



COLLABORATION AND COMMUNICATION

These technologies allow users to exchange questions and responses and share and edit files and documents with one another in real-time. Sample tools include [Google Hangouts](#), [Join.Me](#), and [Skype](#).



PROBLEM-SOLVING PRACTICE AND ASSESSMENT

These technologies provide users with repeated tasks of a similar nature and novel problems for specific content or skills, sometimes personalized to the individual student. Sample tools include [Get More Math!](#), [IXL Learning](#), and [Amplify ELA](#).



TUTORIALS AND REFERENCE MATERIALS

These technologies use video, audio, and text to explain important concepts and demonstrate target skills and procedures. Sample tools include [Khan Academy](#), [Open Culture](#), and [Smithsonian Learning Lab](#).



MULTIMEDIA TOOLS

These technologies allow users to develop creative products using audio-visual, graphics/visualization, and word processing applications. Sample tools include [Prezi](#), [Animoto](#), and [Google Docs](#).



SIMULATIONS AND GAMES

These technologies require users to leverage digital tools and functions to solve problems, conduct experiments, and simulate real-world scenarios. Tools include [PBS Kids](#), [Sheppard Software](#), and [National Geographic Kids](#).



LEARNING MANAGEMENT SYSTEMS

These platforms help teachers organize all materials and resources for a given class (including other digital tools) in a central location for student access. Platforms include [Google Classroom](#), [Blackboard Learn](#), and [Canvas](#).

Source: Multiple²⁴

Importantly, teachers should first reference digital tools and online learning resources collected and reviewed by their district or school or their state education agency before embarking on a self-driven search, as this will save time and act as a baseline filter of quality.²⁵

Teachers can review materials from state education agencies—often originating from offices of online learning, distance learning, or curriculum and instruction—to identify digital curricula and instructional resources that have been vetted for standards alignment and overall quality.²⁶ Teachers also can identify open educational resources by referring to the [Supplemental Resources and Readings](#) section of this toolkit (pp. 18-19).

Teachers can use the [Evaluating Digital Existing Technologies Worksheet](#) (p. 8) to identify and assess the functionality of the digital tools and web-based

Learn More

Watch the following videos to learn more about finding and evaluating resources to support online learning:

- ["How to Find and Evaluate OER"](#) - Iowa State University²⁷
- ["OER Search"](#) - Open Oregon Educational Resources²⁸
- ["ITC - Learn How to Evaluate Educational Web Resources - Integrating Technology In The Classroom"](#) - Simple K12²⁹

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technologies they have at their disposal through district or school resources or open educational resources. This worksheet specifically helps teachers record the benefits, curricular applications, and potential challenges of using a given tool.

Likewise, the [Quality of Online Courses and Digital Resources Rubric](#) (pp. 9-10) gives teachers a mechanism to evaluate the quality of online courses and other digital resources they identify themselves or have access to via their state or local educational agency. Using the rubric will help teachers select the most effective tools for their instructional needs.

Rubrics for Evaluating Open Educational Resources

Achieve—an nonprofit organization that provides technical assistance, performs policy and advocacy work, and conducts research on college and career readiness—publishes eight rubrics (available in a single PDF file via the hyperlinked icon below) to “help states, districts, teachers, and other users determine the degree of alignment of Open Educational Resources (OER) to college- and career-ready standards and to determine other aspects of quality of OER.” These rubrics include:

- I: Degree of Alignment to Standards
- II: Quality of Explanation of the Subject Matter
- III: Utility of Materials Designed to Support Teaching
- IV: Quality of Assessment
- V: Quality of Technological Interactivity
- VI: Quality of Instructional and Practice Exercises
- VII: Opportunities for Deeper Learning
- VIII: Assurance of Accessibility



Source: Achieve³⁰

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Evaluating Existing Digital Technologies Worksheet

Directions: Use the table below to record those digital platforms, programs, and applications available for your usage. Then, identify the useful features and instructional applications of each item, as they relate to your grade level or subject area. Finally, record any potential challenges you and your students may need to navigate in using the platform, program, or application.

CHALLENGES WITH USE				
INSTRUCTIONAL APPLICATIONS				
USEFUL FEATURES				
PLATFORM/PROGRAM/ APPLICATION				

Source: Center for Mental Health in Schools, University of California at Los Angeles³¹

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Quality of Online Courses and Digital Resources Rubric

Directions: Use this rubric to evaluate the quality and effectiveness of online courses and digital learning resources you identify through your state education agency, your school or district, or your own research. Criteria include items related to curricular alignment, assessment, and instructional management.

Course/Resource Name:

Course/Resource Provider:

Reviewer:

Date of Review:

CRITERIA	UNABLE TO DETERMINE	DOES NOT MEET	PARTIALLY MEETS	MEETS
The state or local education agency has reviewed the course/resource for quality.				
Content and assessments are aligned with the state's academic standards.				
The course/resource engages students in tasks that address various learning styles.				
The course/resource asks students to engage in abstract thinking and critical reasoning.				
The course/resource includes fair, adequate, and appropriate methods and procedures to assess students' mastery of content.				
The course/resource facilitates appropriate teacher-to-student interaction, including timely, frequent feedback.				
The course/resource facilitates appropriate student-to-student interaction and provides a plan for monitoring that interaction.				
Teacher can adapt activities and assessments to accommodate students with disabilities and English learners.				
The course/resource complies with the Americans with Disabilities Act.				
The course/resource gives students access to supplemental materials to enrich content.				
A complete, clear course syllabus or resource description is available for review.				
Issues associated with the use of copyrighted materials are addressed.				
Student work and personal data are secure.				

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CRITERIA	UNABLE TO DETERMINE	DOES NOT MEET	PARTIALLY MEETS	MEETS
Students can be monitored to ensure academic honesty.				
Students will have access to all necessary, relevant learning materials.				
Technical support is available to teachers and students to ensure ease of access and usage.				






Additional Comments on Course/Resource:

Source: Southern Regional Education Board³²

ADAPT PEDAGOGIES TO ONLINE LEARNING

Teachers should recognize and accept that the abrupt shift to online learning will be disruptive to themselves and students, making flexibility, positivity, and calmness under pressure essential to successfully navigating the transition.³³ In particular, teachers should understand that there will be challenges, but that—with creativity, the support of colleagues and school systems, and a willingness to adapt and experiment—they can succeed in providing high-quality instruction to their students even in the absence of face-to-face learning time.³⁴ Furthermore, teachers should appreciate that available research indicates online instruction can be as effective—and potentially more effective in some cases—than in-person instruction, dependent on the quality of implementation.³⁵

Practical Tips to Adapt Curricula and Instruction for Online Learning

STRATEGY	DESCRIPTION
 <p>Set Realistic Expectations</p>	Given the rapidity with which schools have closed, teachers and students have had to adapt quickly and often without sufficient preparation. As such, teachers should honestly reflect on which learning outcomes are achievable and what reasonable expectations look like for themselves and their students.
 <p>Communicate Regularly</p>	Ambiguity around expectations and the briskness with which teachers and students have had to adapt present unique challenges. Teachers need to articulate how students and their families should communicate with them and one another to accomplish educational tasks. At the same time, teachers need to be available and willing to accommodate difficulties students have using online learning formats.
 <p>Maintain Focus on Learning Objectives</p>	While teachers may be comfortable delivering instruction in a certain way, they must be creative in how they develop online learning activities. Essentially, the primary concern should be providing an appropriate pathway for students to achieve curriculum objectives and state and local learning standards.
 <p>Test Content and Technology Before Deployment</p>	This strategy comes with the caveat that, during the current crisis, teachers may be unable to conduct extensive testing prior to using technologies with students. To the extent that is possible and reasonable, teachers should explore and test the educational tools they intend to use to increase familiarity with key functions and identify potential challenges in usage.
 <p>Appreciate New Opportunities</p>	Though an immediate transition to online learning is likely stressful, teachers should consider how it will allow them to experiment with new resources and strategies. Teachers may discover an innovative method for teaching a particular content item that they can apply in subsequent school years.

Source: Johns Hopkins University³⁶

Teachers should reorient their own and their students' expectations and routines. Instruction fundamentally changes when moving from the physical classroom to the digital space, altering the scheduling and timing of learning and the vehicles by which teachers teach and students learn.³⁷ This means that teachers should clearly understand and articulate their school's—or if these are unestablished, their own—expectations for when students should be online completing schoolwork and when students can expect teachers to be available to deliver direct instruction or support

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independent learning tasks. Similarly, teachers should outline the methods they intend to use in instruction so students and their families can be prepared.³⁸ Indeed, increasing the level of clarity attached to instruction, expectations, and communications can greatly facilitate teaching and learning.³⁹

Given the isolating nature of online learning and social distancing, **teachers also must maintain connections with students and promote communication and collaboration among students.**⁴¹

Physical separation means that teachers and students may engage in educational activities at the same time (i.e., synchronous learning) or at different times (i.e., asynchronous learning).⁴² Thus, teachers should devote extra effort and attention to regularly

connecting with individual students around their progress and establishing mechanisms by which students can work together.⁴³ For example, teachers should be available during scheduled class time, promptly respond to questions submitted outside of scheduled class time, communicate regularly regarding deadlines, and provide “meaningful feedback on student work using clear and concise language” in print or via an audio or video chat application.⁴⁴ Comparatively, activities such as “small group assignments, case studies, simulations, and group discussions” can facilitate student-to-student interaction.⁴⁵ Such strategies are vital to maintaining social presence (i.e., “the ability of participants within the online learning community to project their personal characteristics into the community and present themselves as real people”) for both the teacher and their students.⁴⁶

Similarly, teachers need to consider the design of their at-home workspace and how that will impact their ability to stay productive and still meet the needs of students.⁴⁷ Indeed, teachers should minimize the potential for distraction and organize their physical and digital workspaces to most efficiently address student needs, while also maximizing their own comfort and teaching style.⁴⁸

Strategies to Set Expectations for Online Learning

- ✓ Publish requirements, expectations, and the consequences for not meeting them
- ✓ Ask students to list potential obstacles and how to overcome them
- ✓ Have students exchange advice for time management and study skills
- ✓ Provide exemplars of student products for assigned tasks
- ✓ Establish times for teacher-to-student and student-to-student feedback

Source: Carolina Distance Learning | Carolina Biological Supply Company⁴⁰

Tips for Teachers to Organize Their Workspace

TIPS FOR ORGANIZING A DIGITAL WORKSPACE

- Clear your virtual desktop and remove icons from the startup menu that make your system run slower
- Scan paper documents, when possible, and save digital documents
- Place all documents in folders with clear file names so you can easily retrieve them
- Alphabetize file names and be consistent in your filing system
- Organize the folders for all the classes you teach as soon as possible
- Archive emails in folders labeled with the course name and term
- Create shortcuts on your desktop for programs, folders, and websites you use frequently
- Create bookmarks for common internet sites.
- Use a calendar with deadlines and note priorities

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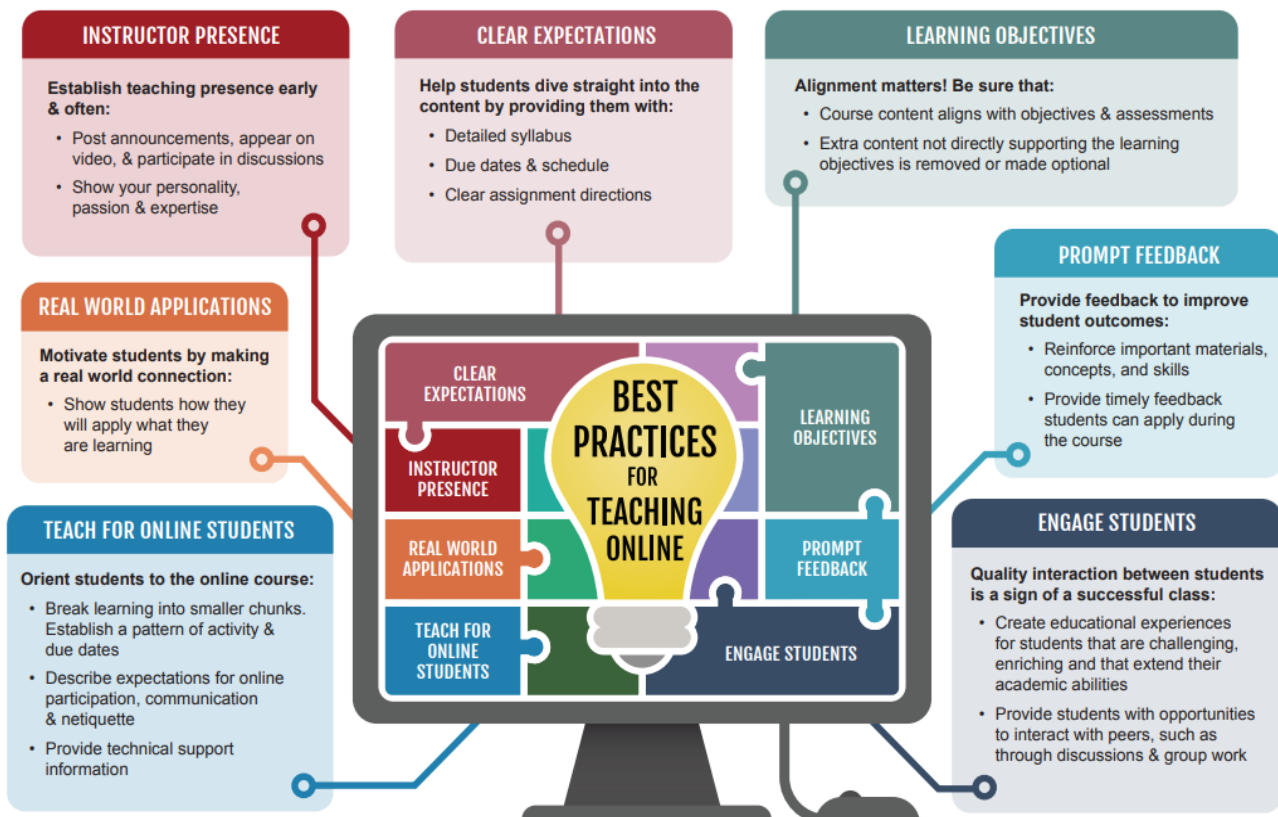
TIPS FOR ORGANIZING A PHYSICAL WORKSPACE

- Set up a space that is separate from your family life and area and allows for quiet and privacy
- Consider a door with a lock or a “do not disturb” sign if you live with others
- Communicate proactively to those sharing your living space of the need to respect your workspace and work hours
- Set up in an area with good light; lights should be directed toward the side of or behind your line of vision
- Make sure you have high speed internet service with antivirus and malware protection software to protect you and your students’ systems
- Consider a desk you can raise and lower to avoid the negative health effects of sitting for long periods of time
- Use a comfortable, supportive, and perhaps ergonomic chair as you will likely be sitting for long periods of time
- Have computer paper, pens, and notebooks on hand
- Do not slump or round your shoulders as fatigue will quickly set in
- Consider using a footrest that allows you to push back into your chair

Source: Michigan Virtual⁴⁹

When designing and delivering online instruction, **teachers should consider general best practices and pedagogies and how digital platforms and technologies support their implementation.**⁵⁰ Teachers should reflect on the needs of their students, their subject matter and grade-level learning standards, and their own personal teaching style to determine how available technologies and digital resources support adaptation of currently-used pedagogies or necessitate the adoption of new techniques.⁵¹

Best Practices for Teaching Online



Source: Arizona State University⁵²

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Broadly speaking, teachers should utilize the following best practices for online instruction to the extent possible given the available resources and their familiarity with them:⁵³


- **Instruction should be student-centered.** In online instruction, sole reliance on traditional lecture-based learning is impractical. Instead, teachers should serve as facilitators and educational coaches, designing challenging activities and providing effective guidance and quality feedback.
- **Learning should be collaborative in nature.** Online instruction should contain small-group activities and team projects where students must collaborate, in order to foster an online community of learners.
- **Courses should foster information, communication, and technology skills necessary for college- and career-readiness and success.** Online instruction should fully utilize the online environment to develop effective digital information, communication, and interpersonal skills and collaboration and team-building skills. In addition, instructional activities should require students to use inventive thinking skills such as creativity, problem-solving, and critical thinking.
- **Instructional format, expectations, and directions should be clear and concise.** Online instruction should be interactive and use the full range of resources and tools offered by the internet. That effort should include the consistent use of clear and specific directions and online materials that are aesthetically pleasing. As with quality face-to-face instruction, online instruction should set forth clear expectations for students and include specific grading rubrics.
- **Activities and assessments should account for different learning styles.** Because students have unique learning styles, online instruction should include activities and assessments that are varied to meet the learning styles of all students.


Teachers can use the subsequent two evaluation tools—the [Reflective Questions for Instructional and Curriculum Adaptations](#) (p. 15) and the [Online Teaching and Learning Self-Evaluation Form](#) (pp. 16-17)—to support conversion of their face-to-face lessons to online platforms. These resources will ask teachers to scrutinize how digital applications and technologies support teaching and learning for their assigned subject and grade level and will provide teachers with criteria upon which to self-evaluate the effectiveness of their online instruction.





Reflective Questions for Instructional and Curriculum Adaptations


Directions: Use the questions and prompts below to drive brainstorming and reflection on instructional planning and curriculum adaptations when transitioning from face-to-face to online learning formats.


-  What new factors do you take into account in your teaching and course design and what elements of classroom practice do you maintain?


-  What do you currently know, or have you recently learned, about students' needs, preferences, concerns, and success rates with online learning?


-  What specific strengths and limitations for online delivery are linked to the subject matter and grade level which you teach or for which you prepare resources?

-  What new demands are students making in terms of how they want to be taught and assessed? What are your responses?

-  What new demands are families making in terms of how they want students to be taught and assessed? What are your responses?

-  What new roles are students taking in their online learning? How has this changed your teaching practice?

-  What new areas of student support are being built into course structures to facilitate effective online learning, and what new strategies are developed to deliver them?

-  Which technologies are you using? What strengths and challenges do they present for online course design delivery, assessment, student interaction, and student support in your assigned grade level and subject area?

Source: TeachOnline.ca⁵⁴

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Online Teaching and Learning Self-Evaluation Form

Directions: Use the rubric below to self-assess the quality of your school's or your individually-developed online teaching and learning program. All criteria derive from the International Association for K-12 Online Learning's (iNACOL) National Standards for Quality Online Programs, specifically those standards focusing on teaching and learning.

Scores correspond to the following descriptions:

- **5 = Exemplary:** a model of best practice as related to the listed criterion;
- **4 = Accomplished:** excellent implementation of the listed criterion, comparable to other examples;
- **3 = Promising:** good implementation of the listed criterion, though implementation is somewhat lacking in depth or detail;
- **2 = Incomplete:** partial implementation of the listed criterion, requiring additional work and attention;
- **1 = Confusing:** implementation of the listed criterion is not obvious or poor, requiring additional work and attention; and
- **N/A = Not Applicable:** standard does not apply.

CRITERIA	N/A	1	2	3	4	5
<i>Curriculum and Course Design: A quality online program will have a well thought-out approach to its curriculum and course design whether it develops its own courses and/or licenses curriculum from other educational providers.</i>						
Has clearly stated and attainable educational goals						
Is clear and coherent in its organization						
Utilizes quality instructional materials and appropriate technology that enable and enrich student learning						
Demonstrates rigorous course content						
Provides for high-degree of interaction between teacher, learners, parents, and among learners themselves						
Embeds critical thinking, problem solving, analysis, integration, and synthesis abilities in learning activities						
Meets requirements of appropriate state or national standards, including applicable end of course assessments						
Meets requirements of accessibility for individuals with disabilities						
Meets requirements of copyright and fair use						
Is designed to accommodate different learning styles						
Is designed with consideration for time and place limitations of students						

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CRITERIA	N/A	1	2	3	4	5
<i>Instruction: A quality online program takes a comprehensive and integrated approach to ensuring excellent online teaching for its students. This process begins with promising practices but is equally committed to continuous improvement and adaptation to student learning needs through professional development.</i>						
Is grounded in the program’s mission, beliefs, and expectations for student learning						
Is supported by research and best practice						
Is continually refined based on assessment of stakeholders’ needs						
Is adaptable to best serve different student learning styles						
Is sensitive to the cultural differences of students						
Includes frequent teacher-to-student interaction, teacher-to-parent interaction, and fosters frequent student-to-student interaction						
Is sensitive to time and place limitations of students						
Faculty hold the required state certifications						
Faculty are trained in and demonstrate competency in online instructional methodologies and learning technologies						
Includes a process to monitor that the work and assessments are completed by the students registered for the course						

CRITERIA	N/A	1	2	3	4	5
<i>Assessment of Student Performance: A quality online learning program values student academic performance and takes a comprehensive, integrated approach to measuring student achievement. This includes use of multiple assessment measures and strategies that align closely to both program and learner objectives, with timely, relevant feedback to all stakeholders.</i>						
Enables students to monitor their own learning progress						
Enables teachers to adapt their instruction to meet learner needs						
Uses multiple methods to assess student performance						
Assesses a variety of types of student performance						
Uses formative assessments to inform instructional practice						
Informs ongoing course design and revisions						
Measures student attainment of the course’s educational goals						
Provides for timely and frequent feedback about student progress						

Source: International Association for K-12 Online Learning⁵⁵

SUPPLEMENTAL RESOURCES AND READINGS

The tables below provide additional resources and readings teachers can reference to support their ability to plan and deliver instruction online. The first table lists hub pages for digital and open educational resources teachers can use to support teaching and learning in an online environment. The second table records supplemental materials that delve further into best practices for online instruction.

Open Educational Resource Reference Pages

RESOURCE (with embedded hyperlink)	PUBLISHER
"14 Free K-12 Resources During Coronavirus Pandemic" ⁵⁶	District Administration
"42 Free Online Resources for Schools Shifting Online During Coronavirus" ⁵⁷	National School Choice Week
"125+ Amazing Online Learning Resources" ⁵⁸	We Are Teachers
"2020 COVID-19 Remote Learning" ⁵⁹	Indiana Department of Education
"Online Resources for Teachers" ⁶⁰	Kentucky Department of Education
"Online Teaching Tools and Resources" ⁶¹	Center for Language Study, Yale University
"Resources that Support Distance Learning" ⁶²	California Department of Education
"Scholastic Learn at Home" ⁶³	Scholastic

Additional Guidance on Planning and Delivering Online Instruction

RESOURCE (with embedded hyperlink)	PUBLISHER	DESCRIPTION
"A National Primer on K-12 Online Learning" ⁶⁴	International Association for K-12 Online Learning	This resource addresses the "basics" of teaching and learning online and covers topics such as the role of the teacher, socialization between students and teachers, and student assessment.
"Best Practices in Teaching K-12 Online: Lessons Learned from Michigan Virtual School Teachers" ⁶⁵	<i>Journal of Interactive Online Learning</i>	This study highlights best practices used by virtual school teachers to support students.
"Best Practices: Online Pedagogy" ⁶⁶	Harvard University	Though tailored to a postsecondary audience, this webpage provides general advice for online instruction that may be useful to K-12 educators.
"Blended and Online Learning" ⁶⁷	Center for Teaching, Vanderbilt University	Though tailored to a postsecondary audience, this webpage presents an overview of research on online and blended learning and discusses effective practices instructors can use to successfully facilitate online courses.

RESOURCE (with embedded hyperlink)	PUBLISHER	DESCRIPTION
<u>"Guide to Teaching Online Courses"</u> ⁶⁸	National Education Association	This guide discusses administrative considerations for developing a high-quality online learning system and describes skills and strategies to help individual teachers achieve success in online teaching formats.
<u>"Identifying, Finding, and Adopting OER"</u> ⁶⁹	Lumen Learning	This webpage provides guidance on finding different types of open educational resources.
<u>"Online Teaching in K-12 Models, Methods, and Best Practices for Teachers and Administrators"</u> ⁷⁰	Information Today, Inc.	This book provides guidance on several important aspects of online instruction such as universal design for online learning, virtual school-to-home communication, and tools and strategies for assessment in online learning formats.
<u>"Teacher Guide to Online Learning"</u> ⁷¹	Michigan Virtual	This guide is designed for teachers who are new to developing and delivering instruction online. Provided guidance includes items such as teaching culturally diverse students, facilitating class discussions, and meeting the needs of students with disabilities.

ENDNOTES

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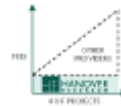
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