

Navigating CTE Instruction Using Virtual Resources:

Best Practices and Helpful Tips

Office of Career, Technical, and Adult Education
Virginia Department of Education
December 3, 2020

Objective

Learn more about how remote and hybrid CTE learning environments can be leveraged to enhance the educational experience in a school year affected by the COVID-19 pandemic.

Agenda

1. Resource Organization
2. Virginia Resources
3. Access & Equity
4. Engaging Instruction
5. Curriculum Planning
6. Student Assessment
7. Work-Based Learning

Resource Organization

Tips for organizing resources

- Set aside time to search for and incorporate useful resources in a manner that works best for you--small amounts of time on a regular basis OR longer research sessions less frequently.
- Set boundaries. Consider limiting research by:
 - Time
 - Subject matter
 - Number of resources

Resource Organization

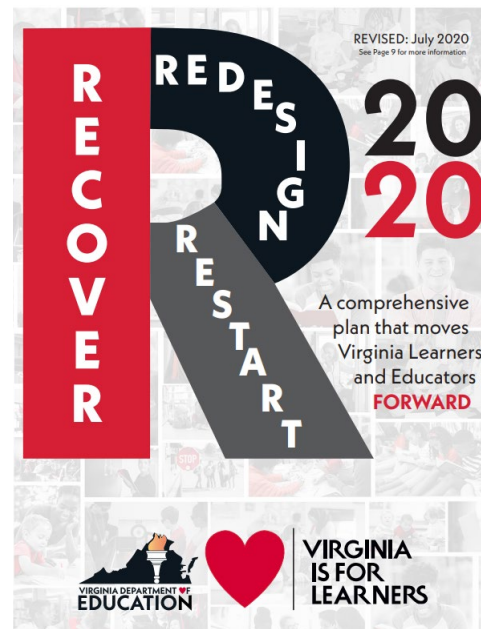
Tips for organizing resources

- Become familiar with your browser's bookmark folder system.
- Consider using a citation management tool, such as:
 - [Zotero](#)
 - [Mendeley](#)
 - [EndNote](#)

Virginia Resources

Recover, Redesign, Restart 2020

- Document published for Virginia school divisions by VDOE in response to the COVID-19 pandemic
- Remote learning considerations for CTE
- Ideas by career cluster
- Links to resources



Virginia Resources

[6-12 Online Resources \(VDOE\)](#)

List of links to general online resources and resources by subject matter for grades 6-12

[6-12 CTE Instructional Models \(VDOE\)](#)

Resources, suggested strategies, and sample course agendas for learner-centered, teacher-centered, and hybrid models of instruction

Virginia Resources

[#GoOpenVA](#)

Collaborative initiative that enables educational entities throughout Virginia to create, share, and access openly-licensed educational resources

[Virtual Virginia](#)

Free K-12 online learning resources and training for Virginia public school educators

Access & Equity

KEY question...

How to address the needs of students who have been disproportionately affected by the pandemic and its corresponding shift to remote and hybrid learning environments?



Access & Equity

Student populations to keep in mind

- Students with disabilities
- Students who require assistive technology
- English language learners
- Students without access to the internet
- Students without access to computers
- Students who have been disproportionately affected by the pandemic and its economic consequences

Access & Equity

Best Practice #1

Design for accessibility using POUR guidelines¹

Perceivable: Course content can be seen/heard by all

Operable: Course content can be navigated by all

Understandable: Course content can be understood by all

Robust: Course content integrates well with technology



¹ [National Center on Accessible Educational Materials. *Designing for Accessibility with POUR*.](#)
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Access & Equity

Best Practice #2

Remote teaching efforts should incorporate and emphasize HUMAN CONNECTION

Focus on the social-emotional aspects of the learning experience and prioritize relationship maintenance so that the “distance” students may encounter as part of remote interaction does not turn into complete “disconnection.”

Engaging Instruction

KEY question...

How to keep students engaged in a remote learning environment?



Engaging Instruction

Strategy

Apply motivational design principles to instruction¹

Engage students and keep their attention by implementing this cyclical approach to instruction:

1. Present content in an engaging manner
2. Follow up with guided practice activities
3. Provide immediate, formative feedback
4. Repeat

¹ Thompson, L. (2016). [Apply motivational design principles to create engaging online modules](#). In Chen, B., deNoyelles, A., & Thompson, K. (Eds.), [Teaching Online Pedagogical Repository](#). Orlando, FL: [University of Central Florida Center for Distributed Learning](#). The Teaching Online Pedagogical Repository is provided as an open educational resource under a [Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License](#).

Engaging Instruction

ARCS Model of Motivational Design¹

Attention: Grab and hold the students' attention

Relevance: Establish the usefulness of material in the eyes of the student

Confidence: Help students believe they can succeed

Satisfaction: Help students feel good about what they have learned

¹ Keller, J. M. (2010). *Motivational Design for Learning and Performance: The ARCS model approach*. New York: Springer

Engaging Instruction

ARCS Model of Motivational Design¹ Attention

- Active participation (interactive simulations, role-play)
- Conflict (ethical dilemmas, “hooks” that prompt participation, debates)
- Variety (multimedia--videos, screencasts, wikis, blogs, mobile apps, images, word clouds)
- Real-world examples and people (problem- and case-based learning, authentic environments and issues)

¹ Keller, J. M. (2010). *Motivational Design for Learning and Performance: The ARCS model approach*. New York: Springer

Engaging Instruction

ARCS Model of Motivational Design¹ Relevance

- Previous experience (advance organizers)
- Present value (active learning techniques, virtual real-world immersion experiences, pop culture)
- Future worth (discipline-specific apps, practice interview skills using web-based technology)
- Modeling (virtual interactions with real-world models of success and professional communities)
- Choice (student-created course content, choice of activities or discussion topics)

¹ Keller, J. M. (2010). *Motivational Design for Learning and Performance: The ARCS model approach*. New York: Springer

Engaging Instruction

ARCS Model of Motivational Design¹ Confidence

- Self-growth (small steps, immediate progress feedback)
- Clear expectations (course orientation modules, visualized objectives, class announcements, structured discussion)
- Constructive feedback (peer review, tuning protocol, intervention messages, how to give and receive)
- Control (flip the classroom, student-created course content, student-led discussion, metacognition, reflective journaling)

¹ Keller, J. M. (2010). *Motivational Design for Learning and Performance: The ARCS model approach*. New York: Springer

Engaging Instruction

ARCS Model of Motivational Design¹ Satisfaction

Praise and reward

(digital badges, virtual reward charts, praise emails to parents, fun GIFS, images, and videos)

Real-world application of knowledge

(augmented and virtual reality tools, virtual simulations)



¹ Keller, J. M. (2010). *Motivational Design for Learning and Performance: The ARCS model approach*. New York: Springer

Curriculum Planning

KEY question...

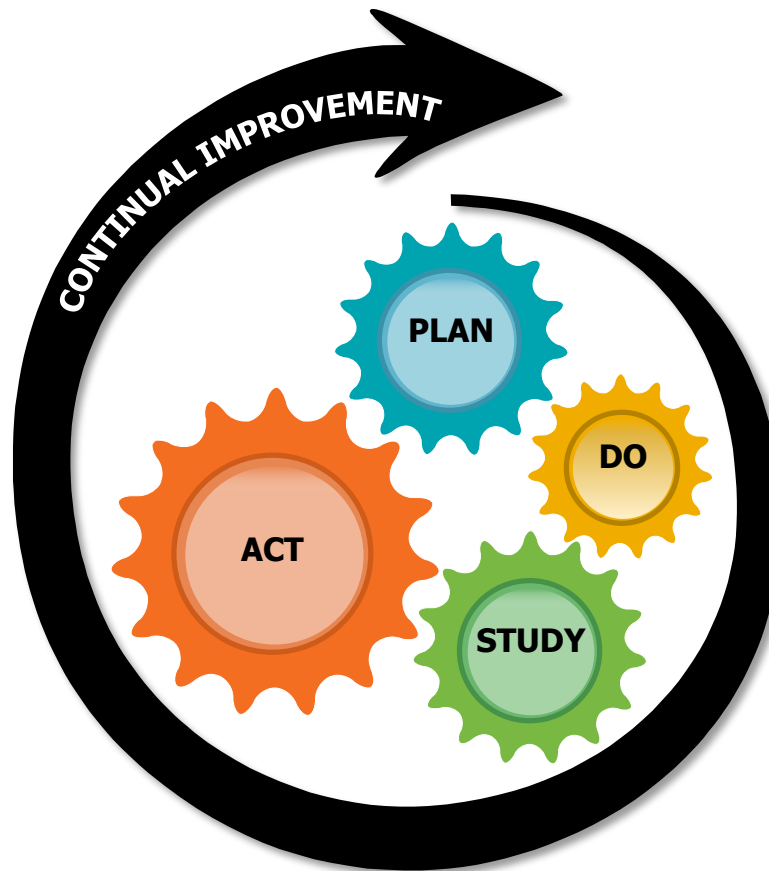
How to maintain alignment with CTE academic and technical standards and achieve desired student outcomes in a COVID-19-impacted school year?



Curriculum Planning

Strategy #1

Implement
Plan, Do,
Study, Act
(PDSA) cycles



Curriculum Planning

Strategy #2

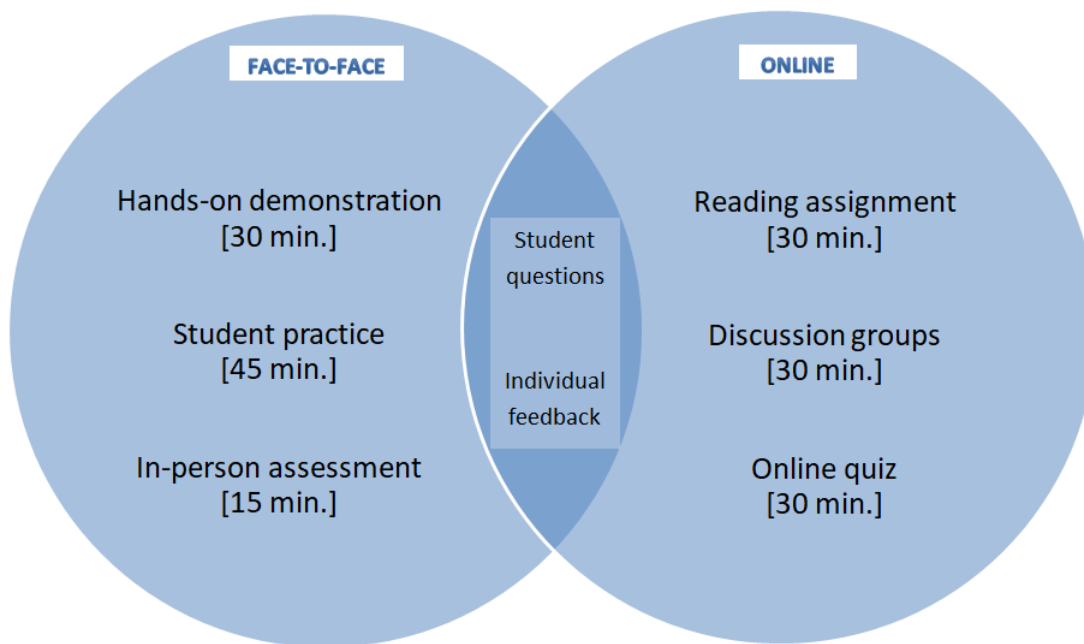
Prioritize standards without eliminating any

- Identify “priority” and “supportive” standards¹
- Capture more basic “supportive” standards as part of a focus on more rigorous and comprehensive “priority” standards

¹ Ainsworth, L. (2015, February 24). [Priority Standards: The Power of Focus](#) in [Peter DeWitt's Finding Common Ground](#). [Education Week](#).

Curriculum Planning

Strategy #3 - Use a [Mix Map](#) to balance online and in-person course components



The Blended Learning Mix Map is part of the [Blended Learning Toolkit](#) prepared by the [University of Central Florida](#) (UCF) and the [American Association of State Colleges and Universities](#) (AASCU) with funding from the [Next Generation Learning Challenges](#) (NGLC). It is provided as an open educational resource under a [Creative Commons Attribution-NonCommercial-ShareAlike 3.0 Unported License](#).

Student Assessment

KEY question...

How to fairly and adequately assess student knowledge in a remote learning environment?



Student Assessment

Important Access & Equity Considerations

- Be sure students' content knowledge and technical skills are being assessed rather than their access to technology
- Multiple methods of assessment may be necessary to accommodate learners with disabilities

Conduct smaller and more frequent assessments

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Student Assessment

Strategy #2

Leverage digital assessment tools and apps

"75 digital tools and apps teachers can use to support formative assessment in the classroom" ¹



LESS IS MORE



Pick about 3 tech tools and stick with them so that they become familiar to students

¹ Dyer, K. (2019, January 31). [Teach Learn Grow: The Education Blog](#). [NWEA](#).

Student Assessment

Strategy #3

Incorporate more performance-based assessments

- Tasks that require application of skills and knowledge rather than just recall and recognition provide more flexibility for open-book type assessments
- Performance items might also be broken down into smaller tasks to be completed over longer periods of time

Student Assessment

Strategy #4

Use conversation and oral defense as evidence of understanding

- Conversation
 - Reinforces human connection
 - Improves social and communication skills
- Oral defense
 - Can be used to authenticate student work

Work-Based Learning

KEY question...

How to integrate work-based learning into a remote learning environment?



Work-Based Learning

Resource Types

- Online, industry-related videos and information
- Virtual labs and simulations
- Virtual worksite tours
- Virtual interviews and mentoring sessions with industry professionals

Work-Based Learning

Online Resources

- [OER Commons](#)
 - Industry-related open educational resources for CTE
- [Nebraska Career Clusters](#)
 - Virtual industry tours by CTE Career Cluster
- [San Diego County Office of Education](#)
 - WBL resources by industry sector

Work-Based Learning

Resources

- [Nepris Video Library](#)
 - Video library of conversations with industry professionals; can filter by career cluster and grade level
- [Southern Regional Education Board CTE Resources](#)
 - Virtual labs and simulations
- [connectED Day at Work Videos](#)
 - Virtual interviews with professionals

Work-Based Learning

21st Century Workplace Readiness Skills for the Commonwealth

Needs Identified by Virginia Employers

Personal Qualities and Abilities

1. **CREATIVITY AND INNOVATION:** Employs originality, inventiveness, and resourcefulness in the workplace
2. **CRITICAL THINKING AND PROBLEM-SOLVING:** Uses sound reasoning to analyze problems, evaluate potential solutions, and implement effective courses of action
3. **INITIATIVE AND SELF-DIRECTION:** Independently looks for ways to improve the workplace and accomplish tasks
4. **INTEGRITY:** Complies with laws, procedures, and workplace policies; demonstrates honesty, fairness, and respect
5. **WORK ETHIC:** Consistently works to the best of one's ability and is diligent, dependable, and accountable for one's actions

Interpersonal Skills

6. **CONFLICT RESOLUTION:** Negotiates diplomatic solutions to interpersonal and workplace issues
7. **LISTENING AND SPEAKING:** Listens attentively and asks questions to clarify meaning; articulates ideas clearly in a manner appropriate for the setting and audience
8. **RESPECT FOR DIVERSITY:** Values individual differences and works collaboratively with people of diverse backgrounds, viewpoints, and experiences
9. **CUSTOMER SERVICE ORIENTATION:** Anticipates and addresses the needs of customers and coworkers, providing thoughtful, courteous, and knowledgeable service
10. **TEAMWORK:** Shares responsibility for collaborative work and respects the thoughts, opinions, and contributions of other team members



Professional Competencies

11. **BIG PICTURE THINKING:** Understands one's role in fulfilling the mission of the workplace and considers the social, economic, and environmental impacts of one's actions
12. **CAREER AND LIFE MANAGEMENT:** Plans, implements, and manages personal and professional development goals related to education, career, finances, and health
13. **CONTINUOUS LEARNING AND ADAPTABILITY:** Accepts constructive feedback well and is open to new ideas and ways of doing things; continuously develops professional skills and knowledge to adjust to changing job requirements
14. **EFFICIENCY AND PRODUCTIVITY:** Plans, prioritizes, and adapts work goals to manage time and resources effectively
15. **INFORMATION LITERACY:** Locates information efficiently, evaluates the credibility and relevance of sources and facts, and uses information effectively to accomplish work-related tasks
16. **INFORMATION SECURITY:** Understands basic Internet and email safety and follows workplace protocols to maintain the security of information, computers, networks, and facilities
17. **INFORMATION TECHNOLOGY:** Maintains a working knowledge of devices, resources, hardware, software, systems, services, applications, and IT conventions
18. **JOB-SPECIFIC TOOLS AND TECHNOLOGIES:** Knows how to select and safely use industry-specific technologies, tools, and machines to complete job tasks effectively
19. **MATHEMATICS:** Applies mathematical skills to complete tasks as necessary
20. **PROFESSIONALISM:** Meets organizational expectations regarding work schedule, behavior, appearance, and communication
21. **READING AND WRITING:** Reads and interprets workplace documents and writes effectively
22. **WORKPLACE SAFETY:** Maintains a safe work environment by adhering to safety guidelines and identifying risks to self and others

Trailblazers Web Portal



<http://ctetrailblazers.org/resources/>

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