



Virtual Learning Post-Pandemic: A 2023 Accessibility Guide

Introduction:

The COVID-19 pandemic brought about rapid changes in various sectors, with education at the forefront. As institutions worldwide grappled with lockdowns and social distancing measures, the traditional classroom setting transformed. The need for continuity in education led to the swift adaptation to virtual learning. This shift was not just a temporary solution but a revelation of the potential of digital platforms in education.

Many institutions held a rich legacy of supporting students with disabilities; priding themselves on creating an inclusive environment where every student, regardless of their abilities, had an equal opportunity to thrive academically. This commitment was put to the test during the pandemic. While the transition to online learning presented its set of challenges, it also highlighted areas of growth and improvement in our approach to accessibility.

The pandemic, in many ways, served as a catalyst. It presented an invaluable opportunity to introspect and re-evaluate methods of educational delivery. More importantly, it underscored the significance of digital accessibility in the modern educational landscape. As we navigated through these uncharted waters, we realized that some of the changes we were implementing in response to the pandemic were not just temporary fixes but essential long-term solutions. These solutions aimed to ensure that our educational content was not

only accessible to all but also tailored to cater to the diverse needs of our student population.

In this Open Educational Resource (OER)¹, we delve into the journey of digital accessibility in the post-pandemic era, drawing from our experiences, challenges, and successes. We aim to provide insights, guidelines, and best practices to educators, institutions, and stakeholders, emphasizing the importance of creating an inclusive and accessible virtual learning environment for all.

This Open Educational Resource (OER) is derived from comprehensive research and recommendations on flexible teaching, assessment-based referrals, and assistive technology. It aims to provide educators with a concise and actionable checklist to ensure that virtual teaching is inclusive and accessible to everyone.



[Open Educational Resources concept - YouTube Video](#)

¹ OER Commons Webpage: <https://www.oercommons.org/>

Purpose:

This "Virtual Learning Accessibility Guide" serves as a practical guideⁱⁱ for educators, instructional designers, and institutions. It is designed to:

- **Promote Inclusivity:** Ensure that all learners, regardless of their abilities or backgrounds, have equal access to educational content and can participate fully in the virtual learning environment.
- **Integrate Best Practices:** Incorporate proven strategiesⁱⁱⁱ and tools that enhance the virtual teaching and learning experience.
- **Foster Continuous Improvement:** Encourage educators to regularly evaluate and update their teaching methods, ensuring they align with the latest accessibility standards and best practices.
- **By adhering to this guide,** educators can create a virtual learning environment that is effective and inclusive, ensuring that every student can succeed.

Note on the Time-Sensitivity of Information:

The content presented in this Open Educational Resource (OER) reflects the current state of technology and best practices at the time of publication. However, it is important to recognize that the realm of technology, especially in the context of digital learning and accessibility, is dynamic and ever evolving. As technology continues to advance at a rapid pace, some of the tools, platforms, and practices discussed herein may undergo changes, improvements, or even obsolescence.

Readers and educators are encouraged to stay updated with the latest advancements and to continually seek out current resources and training. While this OER provides valuable insights and guidelines based on the present context, it is essential to approach the content with an understanding of its time-limited nature. Always prioritize staying informed and adaptable in the face of technological progress to ensure the most inclusive and effective educational experiences for all students.

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Flexible Teaching and Learning Modality Guidelines

Guideline: Educators including Teachers and professors should offer flexible teaching modalities, allowing both synchronous (live) and asynchronous (pre-recorded or self-paced) sessions. This flexibility ensures that all students, regardless of their schedules or learning preferences, can access the educational content.

For more on the benefits of flexible teaching modalities, see the section on 'Asynchronous vs. Synchronous Learning.'

How to test for this criterion:

- During a teaching session, offer both live and pre-recorded options.
- Collaboratively decide with students on the preferred modality for specific topics or sessions, considering the nature of the content and the students' needs.
- Ensure that each modality provides equivalent educational value and that students can seamlessly switch between them without loss of content or understanding.
- Provide guidance or resources for students unfamiliar with certain modalities or platforms.
- After the session, gather feedback from students regarding the effectiveness and appropriateness of the chosen modality.

Note: Offering flexible teaching modalities caters to diverse learning preferences and needs, ensuring that all students have equal opportunities to engage with the content. When educators prioritize flexibility, they create an inclusive learning environment that benefits all students.

1. Asynchronous vs. Synchronous Learning

- Guideline: Offer both live (synchronous) sessions and pre-recorded (asynchronous) materials to cater to different schedules and learning preferences.
- Implementation: Utilize platforms that support live streaming for real-time interactions and also allow for content to be recorded and accessed at a later time.
- Benefits: Provides flexibility for learners across different time zones and schedules, ensuring everyone has access to the same content.

2. Multimedia Integration

- Guideline: Deliver content in various formats such as videos, podcasts, infographics, and text.

- Implementation: Use multimedia^{iv} tools and platforms to create diverse content types. Ensure consistency in the information across different formats.
- Benefits: Addresses different learning styles and preferences, enhancing comprehension and engagement.

3. Interactive Elements

- Guideline: Incorporate quizzes, simulations, and interactive diagrams to engage learners actively.
- Implementation: Use eLearning authoring tools that support interactivity. Regularly update interactive elements based on feedback.
- Benefits: Promotes active learning and helps in reinforcing concepts.

4. Adaptive Learning Paths

- Guideline: Allow learners to choose their learning path based on their current knowledge level and objectives.
- Implementation: Implement adaptive learning platforms that adjust content based on learner performance and preferences.
- Benefits: Personalizes the learning experience, ensuring content is relevant and challenging.

5. Collaborative Tools

- Guideline: Offer tools for peer interaction, group projects, and discussion forums.
- Implementation: Integrate platforms that support real-time collaboration, document sharing, and discussion boards.
- Benefits: Fosters a sense of community and promotes collaborative learning.

6. Feedback Mechanisms

- Guideline: Provide timely feedback through automated quizzes, peer reviews, or instructor evaluations.
- Implementation: Use platforms that allow for instant feedback on quizzes and assignments. Encourage peer review sessions.
- Benefits: Helps learners identify areas of improvement and reinforces learning.

7. Accessibility Features

- Guideline: Ensure content is accessible to all, including those with disabilities.
- Implementation: Incorporate features like closed captions, voiceovers, and ensure compatibility with screen readers. Follow WCAG (Web Content Accessibility Guidelines)^v guidelines.

- Benefits: Promotes inclusivity and ensures all learners can access and benefit from the content.

For practical tips on enhancing course accessibility, refer to the 'Empowering Faculty for Greater Accessibility' section.

8. Mobile Learning

- Guideline: Optimize content for mobile devices.
- Implementation: Use responsive design principles. Test content on various devices to ensure compatibility.
- Benefits: Allows learners to access content on-the-go, catering to modern learning habits.

9. Personalized Learning Dashboards

- Guideline: Offer learners a personalized dashboard to track progress and access resources.
- Implementation: Integrate platforms that provide analytics and personalized learning paths based on individual performance and preferences.
- Benefits: Empowers learners to take charge of their learning journey.

10. Offline Access

- Guideline: Allow learners to download materials for offline access.
- Implementation: Offer downloadable resources in various formats (e.g., PDF, video). Ensure the platform supports offline viewing.
- Benefits: Ensures content accessibility even in areas with limited or no internet connectivity.

Evaluating Virtual Delivery Platforms

The global shift to online classes during the COVID-19 pandemic necessitated a reevaluation of the tools and platforms used for virtual learning. Institutions, educators, and students alike were thrust into a new digital landscape, prompting the need to identify the best virtual delivery solutions that catered to diverse learning needs.

Platform Reviews:

Adobe Connect:

Pros: Recognized for its features that support good teaching and learning.

Cons: Lacked essential accessibility components, making it less ideal for students requiring specific accommodations.

Bongo/Virtual Classroom:

Pros: Seamlessly integrated into Learning Management Systems, ensuring a unified learning experience.

Cons: Missed out on many of the virtual conferencing features available on other platforms, limiting its versatility.

Microsoft Teams:

Pros: Evolved significantly during the pandemic, encompassing most of the desired features for a robust virtual conferencing platform.

Cons: As with any evolving platform, there were initial challenges in terms of integration and user experience.

Zoom:

Pros: Excelled in its offerings, continuously adding features to enhance the virtual learning experience. Gained the capability to integrate into platforms like Brightspace.

Cons: As with many platforms, there is a learning curve, especially for institutions and educators new to the platform.

Comparison of Web Conferencing Platforms

	Virtual Classroom (Premium)	Zoom	Teams	Adobe Connect
Screen-reader compatibility	✓	✓	✓	
Live automated captions		✓	✓	
Human captioning	✓	✓ -assignable		✓
Ability to export captions	✓	✓	✓	
Downloadable Recordings with synced captions	✓	✓	✓ -Recordings only	✓ -Recordings only
Keyboard Shortcuts for blind		✓	✓	Limited
Show/hide meeting controls		✓		

Auditory indicators	✓	✓	✓	
Spotlight ASL interpreters		✓		
Use of non-verbal feedback	✓	✓	✓	✓
Auto-save chat (allows attendees to review chat or links in chat after session)		✓	✓	

**Data as of February 2021*

Key Takeaways:

The transition to virtual learning was not without its challenges. However, the rapid adaptation and evaluation of these platforms have paved the way for a more inclusive and accessible learning environment. The goal is to ensure that these platforms are not only robust in their functionalities but also user-friendly and accessible to all, especially students with disabilities.

Impact on Students

The transition to virtual learning brought about by the COVID-19 pandemic has had profound effects on students. While the shift presented numerous advantages, it also introduced a set of challenges that institutions and educators need to address to ensure a holistic and inclusive learning experience.

Benefits:

Improved Access to Digital Content: The virtual learning environment has made educational content more accessible than ever. Students can now access lectures, readings, and other resources at their convenience, allowing for a more flexible learning schedule.

Enhanced Personal Instruction Experience: Virtual platforms offer features like screen sharing, breakout rooms, and interactive polls, which have enriched the instruction experience. Students can now view the educator's screen, face, and content more clearly, making lessons more engaging and interactive.

Anonymity and Inclusivity: Virtual classrooms have provided students with a sense of anonymity, ensuring that they do not feel singled out, especially those requiring accommodations. This has fostered a more inclusive environment where every student feels valued and heard.

Real-time Captions and Transcripts: The integration of real-time captions in virtual platforms has transformed the learning experience, especially for students who are deaf or hard-of-hearing. Additionally, these captions benefit English-language learners and those with attention or focus challenges, enhancing comprehension and retention.

Cost Savings and Health Benefits: Virtual learning has eliminated the need for commuting, leading to significant savings in terms of time and money. Moreover, students with medical conditions or those who are immunocompromised can continue their education without the risks associated with in-person instruction.

Challenges:

Technical Issues: From unstable internet connections to software glitches, technical issues have occasionally disrupted the smooth flow of virtual classes.

Focus Challenges: Staying attentive during online sessions can be challenging, especially with potential distractions at home.

Feelings of Disconnection: The absence of physical interaction has led some students to feel disconnected from their peers and educators, impacting the sense of community.

Inconsistencies in Virtual Platforms: With a plethora of virtual platforms available, inconsistencies in features and user experience can lead to confusion and hinder the learning process.

Inaccessibility of Certain Platforms: Not all virtual platforms are designed with accessibility in mind. Some platforms may not support assistive technologies, posing challenges for students with disabilities.

While virtual learning has undeniably brought numerous benefits to the table, it is essential to address the associated challenges to ensure that every student has an enriching and inclusive learning experience. As educators and institutions, it is our responsibility to continually evaluate and adapt our methods to cater to the diverse needs of our student population.

Empowering Educators for Greater Accessibility

In the era of digital learning, it is imperative for educators to be equipped with the tools and knowledge to create an inclusive and accessible learning environment. By understanding and implementing certain principles and strategies, educators can ensure that their courses cater to the diverse needs of all students.

Universal Design for Learning (UDL)^{vi} Principles:

Universal Design for Learning (UDL) is an educational framework based on research in the learning sciences. (CAST (2018). Universal Design for Learning Guidelines version 2.2. <http://udlguidelines.cast.org>) It guides the design of learning experiences to proactively meet the diverse needs of all students. The three primary principles of UDL are:

- Representation: Presenting information and content in various ways to cater to different learning styles.
- Action & Expression: Allowing students multiple avenues to express their understanding and demonstrate knowledge.
- Engagement: Motivating students by offering choices in how they engage with the content, ensuring relevance and interest.

By integrating UDL principles into course design, educators can create a flexible learning environment that reduces barriers and maximizes learning for all students.

Case Study 1: Embracing Flexibility in Teaching Modalities

Background:

Professor A teaches a popular history course at a College in Ontario. Traditionally, the course was delivered in-person, with occasional online resources to supplement learning. However, the course is now virtual, Professor A faced challenges in ensuring that all students could access and engage with the content effectively.

Challenge:

A significant portion of the students in the course were international, residing in different time zones. This made synchronous sessions challenging. Additionally, some students had disabilities that made accessing traditional online content difficult.

Solution:

Professor A decided to implement guidelines outlined in this OER. The course was restructured to offer both synchronous and asynchronous sessions. Multimedia content, such as videos, podcasts, and infographics, was introduced. Interactive elements like quizzes and simulations were integrated to enhance engagement. All content was optimized for accessibility, with features like closed captions and compatibility with screen readers.

Case Study 2: Enhancing Course Accessibility in a Technical Program

Background:

Professor B is an instructor for a technical program at a college in Canada. The course involves complex simulations, software demonstrations, and hands-on activities. While the content was rich and comprehensive, students often reported challenges in understanding and retaining information.

Challenge:

Many students in the course were visual or kinesthetic learners. The traditional lecture format, with occasional demonstrations, did not cater to their learning styles. Additionally, some students had hearing impairments, making it challenging to follow along without adequate support.

Solution:

Using the guidelines from this "Virtual Learning Accessibility Checklist" OER, Professor B revamped the course. Demonstrations were recorded and made available for students to revisit. Interactive simulations were introduced, allowing students to practice hands-on activities in a virtual environment. All video content was captioned, and additional resources like transcripts and infographics were provided.

Tips for Enhancing Course Accessibility:

Using the Accessibility Checker in Microsoft:

Microsoft Office Suite comes with a built-in Accessibility Checker that identifies potential accessibility issues in documents, presentations, and spreadsheets.

Educators can use this tool to ensure that their course materials are accessible, making necessary adjustments based on the feedback provided by the checker.

[Improve accessibility with the Accessibility Checker](#)

Providing Captions and Transcripts:

Captions are crucial for students who are deaf or hard-of-hearing, but they also benefit a broader audience, including English-language learners and students with attention challenges.

Transcripts offer an alternative way to access content, especially for those who prefer reading or need to review content at their own pace.

Platforms like Zoom, Microsoft Stream, and YouTube provide automated captioning features that can be utilized.

Recording Classes for Content Review:

Recording live sessions allows students to revisit lectures, ensuring they do not miss crucial information.

Platforms like Zoom and Microsoft Teams offer easy recording options. These recordings can be shared with students, providing them with a valuable resource for revision and deeper understanding.

Empowering educators with the knowledge of UDL and practical tips for enhancing accessibility ensures that courses are designed with all students in mind. As we continue to navigate the realm of digital education, it is essential to prioritize accessibility, ensuring that every student has an equal opportunity to succeed.



Universal Design for Learning

Why Use U.D.L.?

Equal Opportunity

Serve the needs of all learners

Benefits of UDL

Challenging & Achievable

Balanced Curriculum

Removed Barriers

Strengths

UDL Principles

Expression

Representation

Engagement

Collaboration

Inclusion/Cooperation

Choice/Know

Get Time

Communicate

Plan & Assess

Incorporating a UDL

Choice Assignments

Flexible Assessment

Support

Variety of Materials

Vary Presentation

Classroom Examples

Environment

Flexibility

Group Work

Projects

Multi-sensory Lessons

Student Centered

Lesson Planning

Class Profiles

Find Viable Curriculum

EM&L Tools

Variety

Reflection

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Conclusion: Embracing the Future of Inclusive Digital Education

This Open Educational Resource serves as a testament to our collective commitment to ensuring that education remains accessible to all, irrespective of physical, geographical, or technological barriers. The guidelines, insights, and best practices shared are not just responses to a global crisis but are foundational pillars for the future of education.

As educators, institutions, and stakeholders, our mission goes beyond imparting knowledge. It is about creating environments where every student feels valued, heard, and empowered. As technology continues to evolve, so must our strategies and approaches. By prioritizing inclusivity and accessibility, we are not only addressing the needs of today but are also paving the way for a more inclusive and equitable future.

Let us continue to collaborate, innovate, and inspire. The future of education is digital, but more importantly, it is inclusive. Together, we can ensure that the virtual classrooms of tomorrow are spaces where every student thrives.

ⁱ Open Education and Accessibility: <https://www.cccoer.org/learn/open-education-and-accessibility/>

ⁱⁱ Benefits of OER: https://www.affordablelearninggeorgia.org/about/benefits_of_oer

ⁱⁱⁱ Inclusive Teaching: <https://cft.vanderbilt.edu/guides-sub-pages/inclusive-teaching/>

^{iv} Interactive Multimedia Advantages: <https://elearningindustry.com/interactive-multimedia-learning-advantages>

^v W3C Standard Guidelines: <https://www.w3.org/WAI/standards-guidelines/wcag/>

^{vi} CAST UDL Guidelines: <http://udlguidelines.cast.org/>