Using E-Learning Platforms for Inclusive Teaching

Key Concepts of Inclusive Teaching and E-Learning

Objective: Understand Key Concepts of Inclusive Teaching and E-Learning

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Learning Outcomes

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- **Define Inclusive Teaching and E-Learning**: Understand the concept of inclusive teaching and its importance in addressing diverse student needs.

- **Explain the Universal Design for Learning (UDL) Framework**: Identify the key principles of UDL, including engagement, representation, and expression, and how they can be applied in online teaching.

- **Demonstrate Accessibility Best Practices**: Recognize and apply accessibility standards (e.g., WCAG) in e-learning, ensuring content is perceivable, operable, understandable, and robust.

- **Analyze Cultural Responsiveness in Teaching**: Describe the role of cultural backgrounds in inclusive teaching and strategies to incorporate cultural relevance in e-learning.

- **Assess E-Learning Platforms for Inclusivity**: Evaluate e-learning platforms like Moodle, Blackboard, and Canvas for accessibility features that support inclusive learning.

Learning Outcomes

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- **Implement Inclusive E-Learning Tools**: Use tools such as screen readers, closed captioning, and text-to-speech technology to enhance accessibility.

- **Design Flexible Assessments**: Create diverse assessment methods that offer students multiple ways to demonstrate their learning.

- **Evaluate E-Learning Platforms Using WCAG Standards**: Conduct assessments of platform accessibility based on WCAG guidelines and other inclusive teaching standards.

- **Develop an Inclusive E-Learning Environment**: Apply inclusive teaching strategies such as using multiple content formats, interactive elements, and flexible assessments to support all learners.

- **Identify Challenges and Opportunities in Inclusive E-Learning**: Reflect on the challenges and benefits of implementing inclusive e-learning practices.

Introduction to Inclusive Teaching

(1) What is Inclusive Teaching?

- The practice of including **all students** in the learning process by addressing **diversity and differences** in backgrounds, abilities, and learning styles.

- "Inclusive teaching helps to ensure that all students are fully engaged in learning activities."
  — Vanderbilt Center for Teaching

Image Reference: AI Generated Photo by Stockcake
https://stockcake.com/i/virtual-classroom-interaction_1186278_1139827

Introduction to Inclusive Teaching (2)

Why is it important?

- Enhances student engagement in HE

- Reduces achievement gaps

- Existing studies show increased engagement and success rates with inclusive practices.

Image Reference: **Framework for Enhancing Student Success in Higher Education**
https://www.advance-he.ac.uk/knowledge-hub/framework-enhancing-student-success-higher-education

Application of UDL approach for Inclusive Education

1. Universal Design for Learning (UDL) enriches the practices of inclusive education in different educational contexts.

2. UDL approach of transforms the process of education and strengthening teacher inclusive attitudes

3. UDL application model is valuable in terms of developing inclusive education practices, as it allows us to see barriers to pupil education as well as relevant directions for improving education in any educational and cultural context.
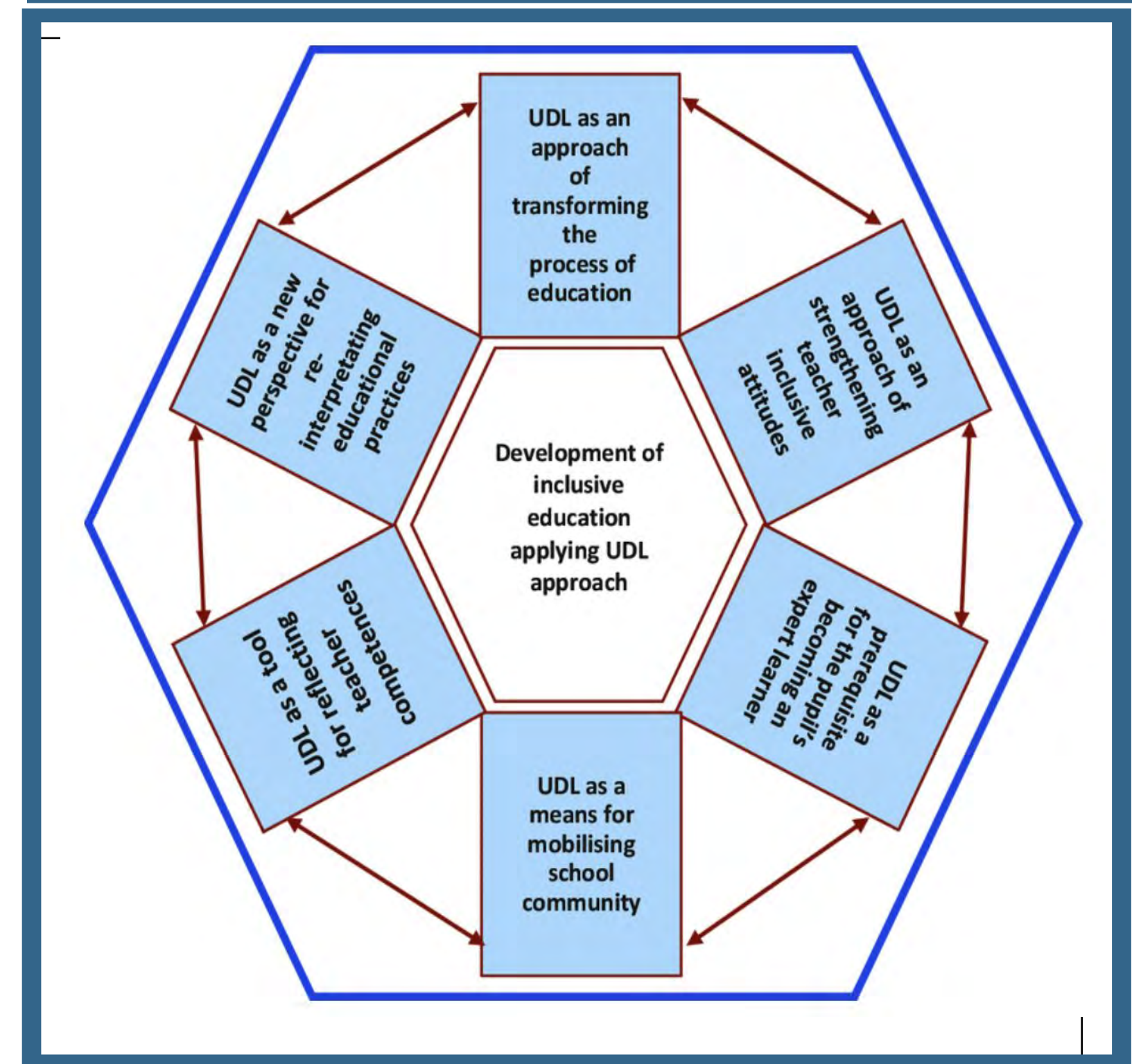

Image Reference: Model for applying the UDL approach while developing inclusive education
The Model of UDL Implementation Enabling the Development of Inclusive Education in Different Educational Contexts: Conclusions - Scientific Figure on ResearchGate. Available from:
https://www.researchgate.net/figure/Model-for-applying-the-UDL-approach-while-developing-inclusive-education_fig1_354514460 [accessed 27 Feb 2025]

Key Principles of Accessibility (1)

What is Accessibility?

- Ensuring that learning materials and environments are usable by all students, including those with disabilities.

- The World Wide Web Consortium (W3C)'s **Web Accessibility Initiative (WAI)** is an effort to improve the accessibility of the World Wide Web for people with disabilities - https://www.w3.org/WAI/
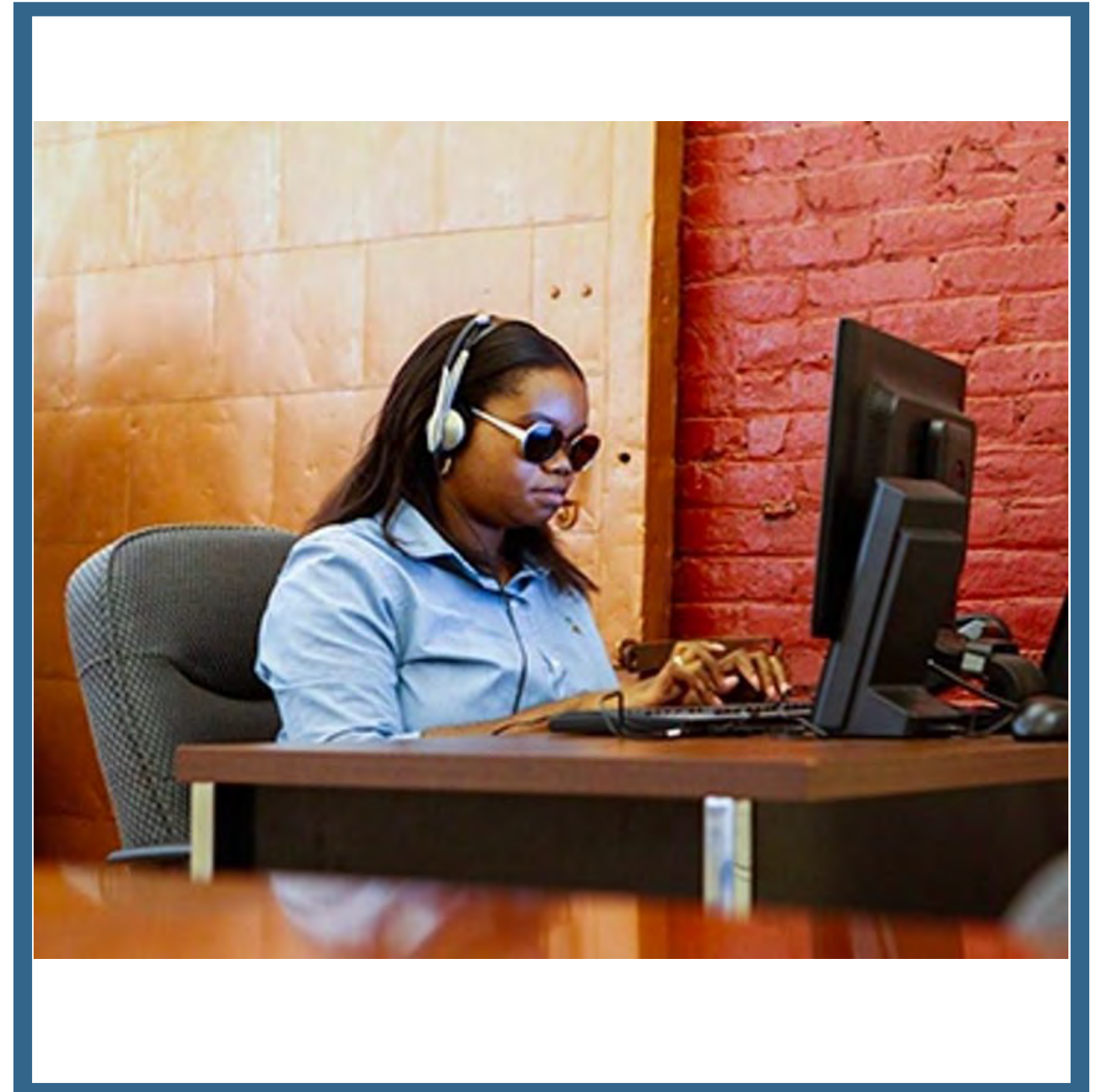

Image Reference: CapAble, Screen Readers
https://cap-able.com/wp-content/uploads/2022/10/Screen-reader.jpg

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Key Principles of Accessibility (2)

WCAG 2.2 Guidelines

- Perceivable, Operable, Understandable, Robust (POUR principles).

- The Web Content Accessibility Guidelines (WCAG) are part of a series of web accessibility guidelines published by the WAI of the W3C.

- The WCAGs provides technical specifications to improve the accessibility of websites and many other digital experiences.
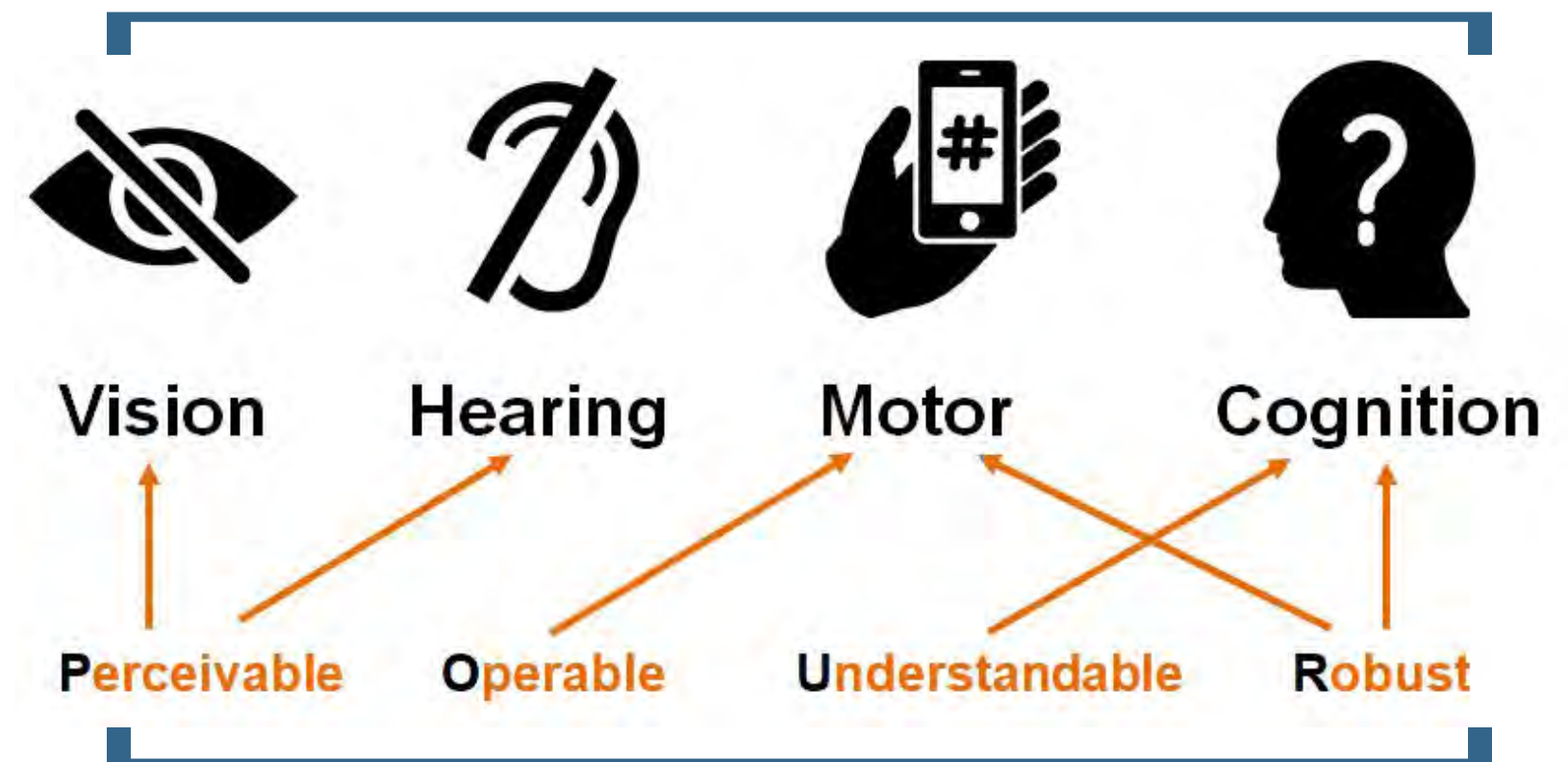

Image Reference: Karten Network
https://karten-network.org.uk/wp-content/uploads/2019/12/pour-4-Main-Principles-of-Accessibility.gif

- WCAG - detailed information can be found at:

https://www.w3.org/WAI/WCAG22/quickref/

Cultural Responsiveness in Teaching

- Teaching that acknowledges and incorporates the cultural backgrounds of students.
- Tailoring examples and materials to be relevant to students from diverse cultures.
- European School Education Platform:
  - Understanding this new method emerged in the last years thanks to important phenomena affecting our daily lives and in particular the educational sector;
  - Learning about the actual theoretical frame and literature referring to Culturally Responsive Teaching (CRT);
  - Sharing different teaching situations where multicultural experiences are present and teachers have to deal with them;
  - Experiencing new approaches and challenges for teachers in the actual multicultural class;
  - Exploring new types of lesson plans combining Non Formal Education, Outdoor Education and Global Education.

THIRD-PARTY ON-SITE COURSE

TEACHING IN A GLOBAL CULTURAL CLASS ENVIRONMENT. The Culturally Responsive Teaching (CRT) Approach

Teaching in a multicultural class is a challenge which started a long time ago and new generations (the Erasmus generation of former teachers) are facing a more facilitated approach but nowadays having different cultures in class is structural and part of the daily life of the whole society.

Image Reference: European School Education Platform
https://school-education.ec.europa.eu/en/learn/courses/teaching-global-cultural-class-environment-culturally-responsive-teaching-crt-approach-0

E-Learning and Inclusivity (1)
How E-Learning Can Foster Inclusion in HE

- Flexibility

  Allows students to learn at their own pace.

- Personalized Learning
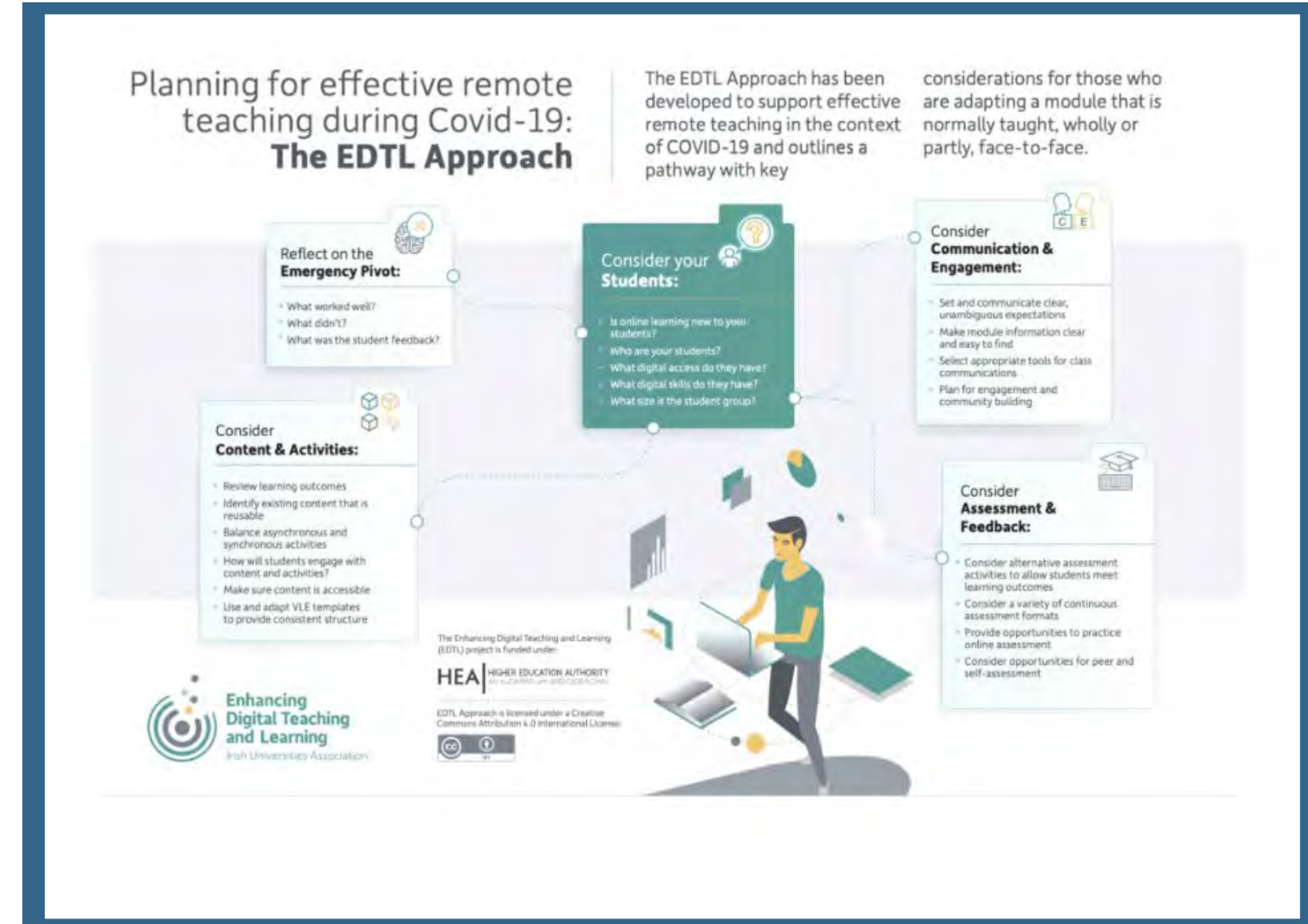
  Adapts to different student needs.

Image Reference: **The Enhancing Digital Teaching and Learning in Irish Universities Project (EDTL)**
https://www.iua.ie/ourwork/learning-teaching/digital-learning/

E-Learning and Inclusivity (2)

Challenges in E-Learning for Accessibility

- Common Issues:
  - Lack of screen reader support
  - Inaccessible content formats
  - Limited captions

AI generated / edited image.

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Inclusive E-Learning Features (1) Screen Reader Compatibility

- How screen readers interpret digital content for visually impaired students.

- NonVisual Desktop Access (NVDA) is a free and open-source, portable screen reader for Microsoft Windows. **-** https://www.nvaccess.org/

Image Reference: What is NVDA? Definition of Nonvisual Desktop Access and Its Key Features
https://accessiblyapp.com/blog/nvda/

- Example of NVDA in Ireland:

https://www.universityofgalway.ie/disability/support/assistive-technology/

Inclusive E-Learning Features (2)

Closed Captioning and Transcription

- It is important because:

  o Helps students with hearing impairments.

  o Enhances comprehension for all students.

- YouTube added the ability to automatically transcribe and generate captioning on videos named as **YouTube Automatic Captioning.** - https://support.google.com/youtube/answer/6373554
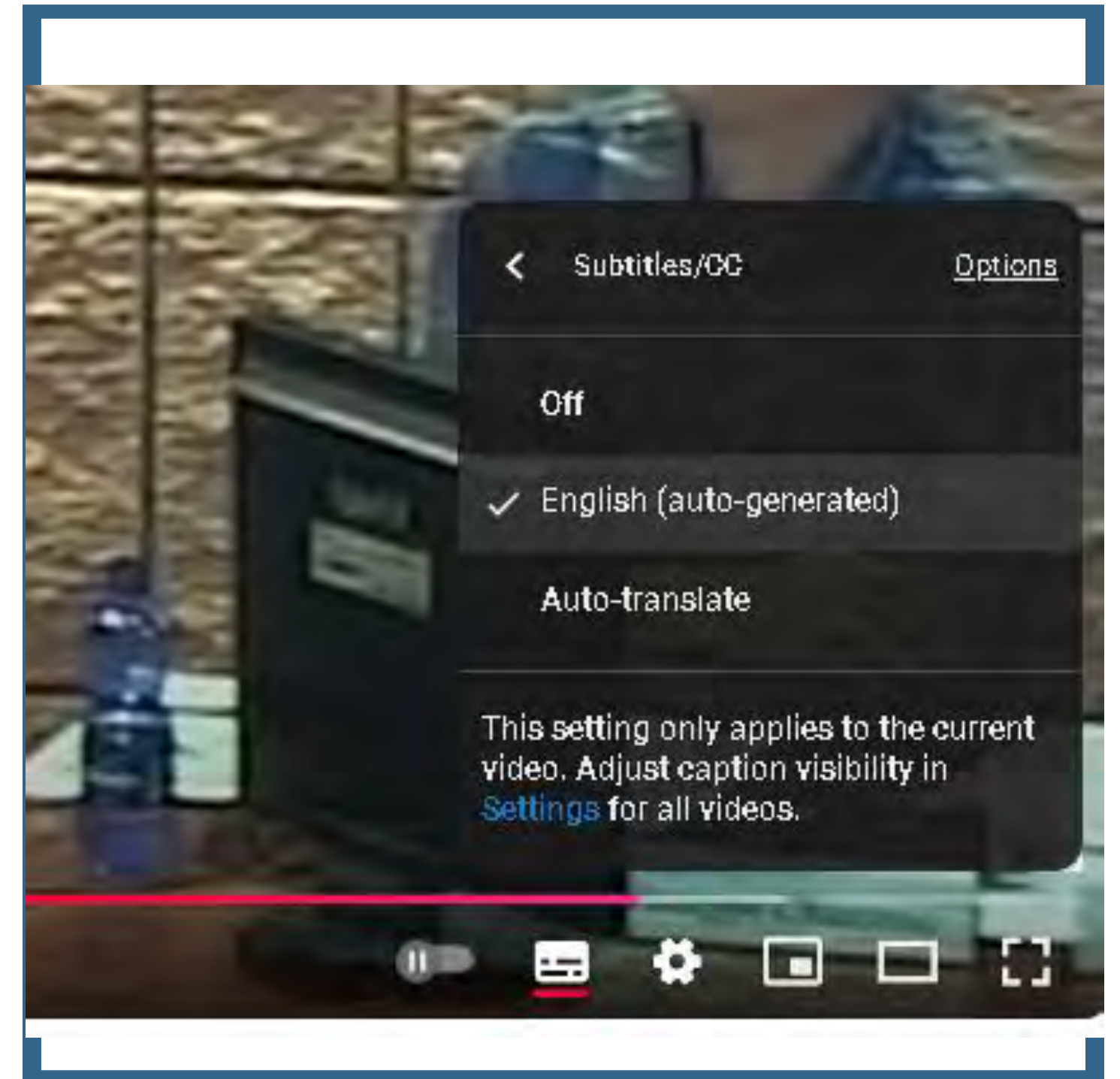

Image Reference: Screenshot captured from a YouTube video with captions enabled.

Inclusive E-Learning Features (3) Keyboard Navigation & Alternative Text for Images

- It is important because:

  o Enables students with physical disabilities to navigate content.

  o W3C's WAI (also mentioned in previous slides) has a tutorial on this topic -
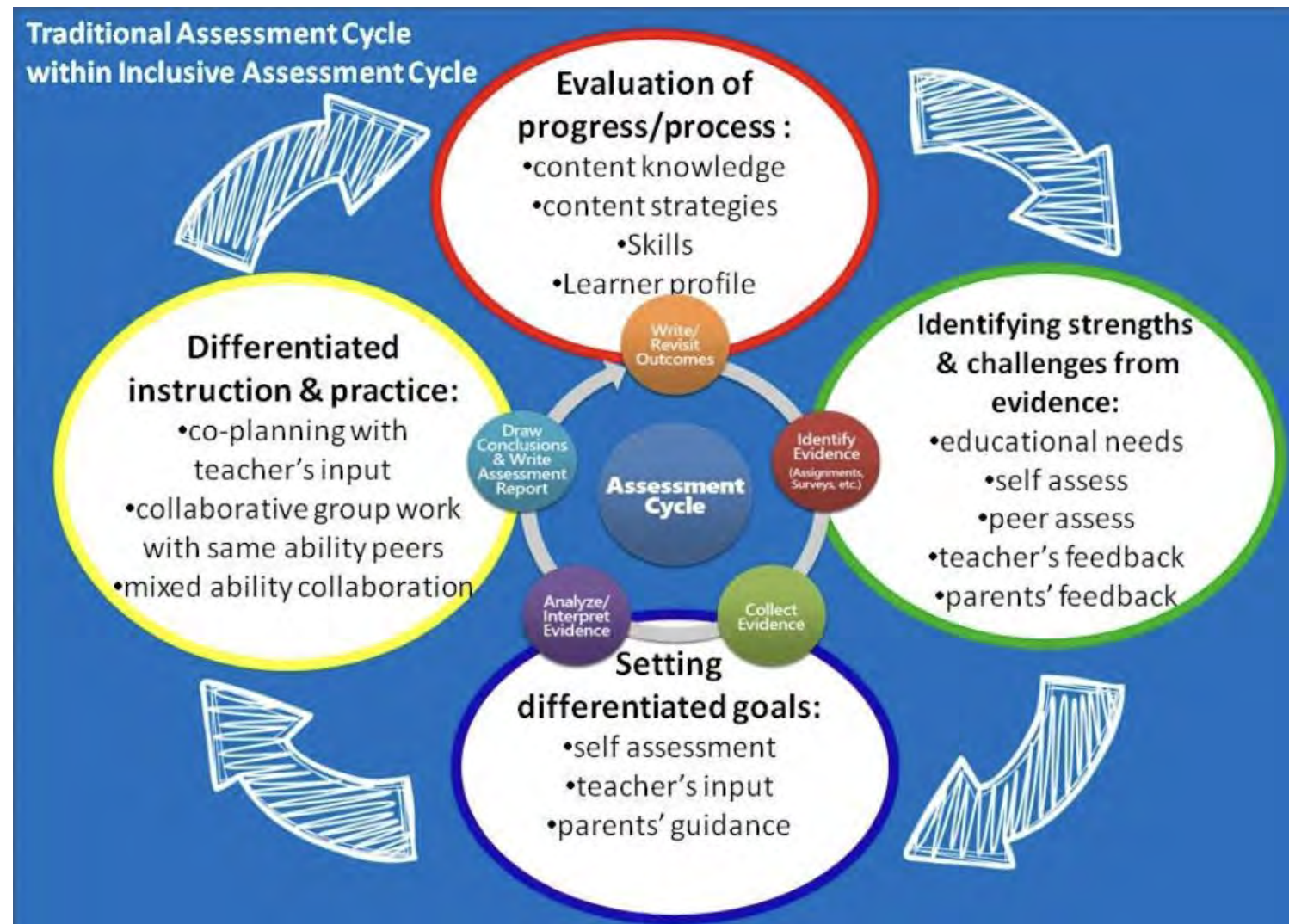
    https://www.w3.org/WAI/tutorials/images/

90% of websites are inaccessible to people with disabilities who rely on assistive technology. 98% of home pages had detectable WCAG 2.0 failures
- *AbilityNet, WebAIM*

Image Reference: https://codemantra.com/e-learning-accessibility-a-guided-approach/

Flexible Assessment Methods (1)
What is Flexible Assessment?

Traditional

Traditional Assessment Cycle within Inclusive Assessment Cycle

Evaluation of progress/process:
• content knowledge
• content strategies
• Skills
• Learner profile

Identifying strengths & challenges from evidence:
• educational needs
• self assess
• peer assess
• teacher's feedback
• parents' feedback

Differentiated instruction & practice:
• co-planning with teacher's input
• collaborative group work with same ability peers
• mixed ability collaboration

Setting differentiated goals:
• self assessment
• teacher's input
• parents' guidance

Write/Revisit Outcomes
Identify Evidence (Assignments, Surveys, etc.)
Draw Conclusions & Write Assessment Report
Assessment Cycle
Analyze/Interpret Evidence
Collect Evidence

https://www.pypteachingtools.com/blog/assessment-and-student-agency-in-the-ib-pyp

Alternative

Continuous
Culturally responsive
Engaging
Alternative forms
Authentic
Equitable
Flexible
Renewable
Interdisciplinary
Co-created
Alternative assessment

https://edtechbooks.org/ldvoices/alternative_assessment

Flexible Assessment Methods (2)

- In an online course, providing options for
  - Written assignments
  - Videos
  - Interactive projects
- CAST (also motioned in previous slides) prepared <u>UDL Tips for Assessments</u> for guidance.
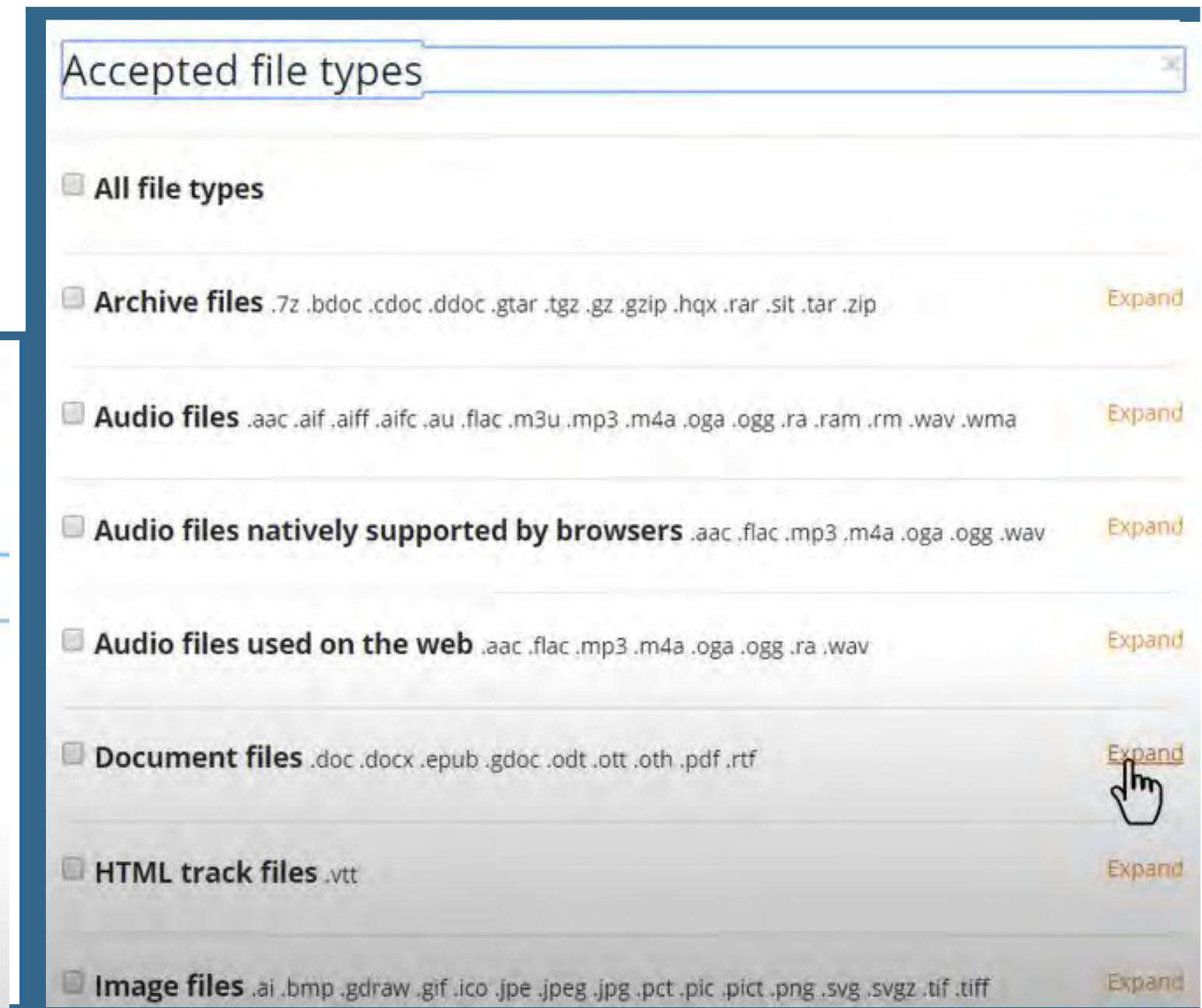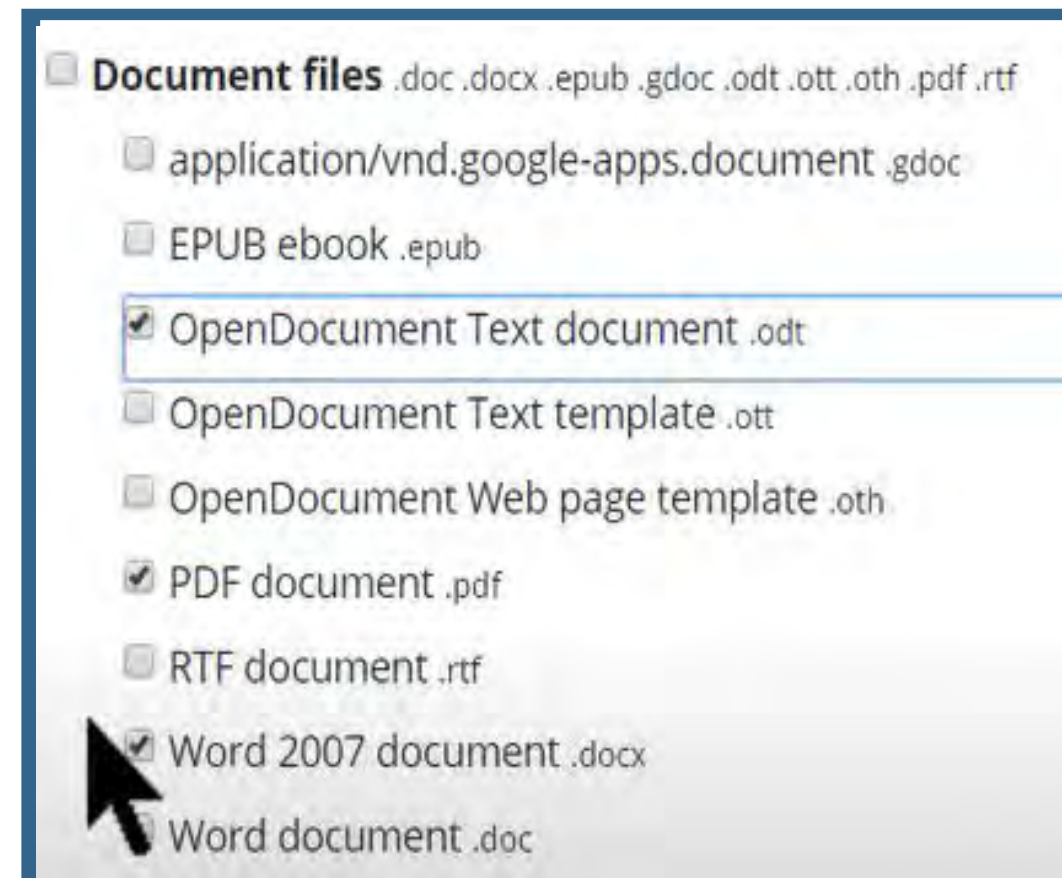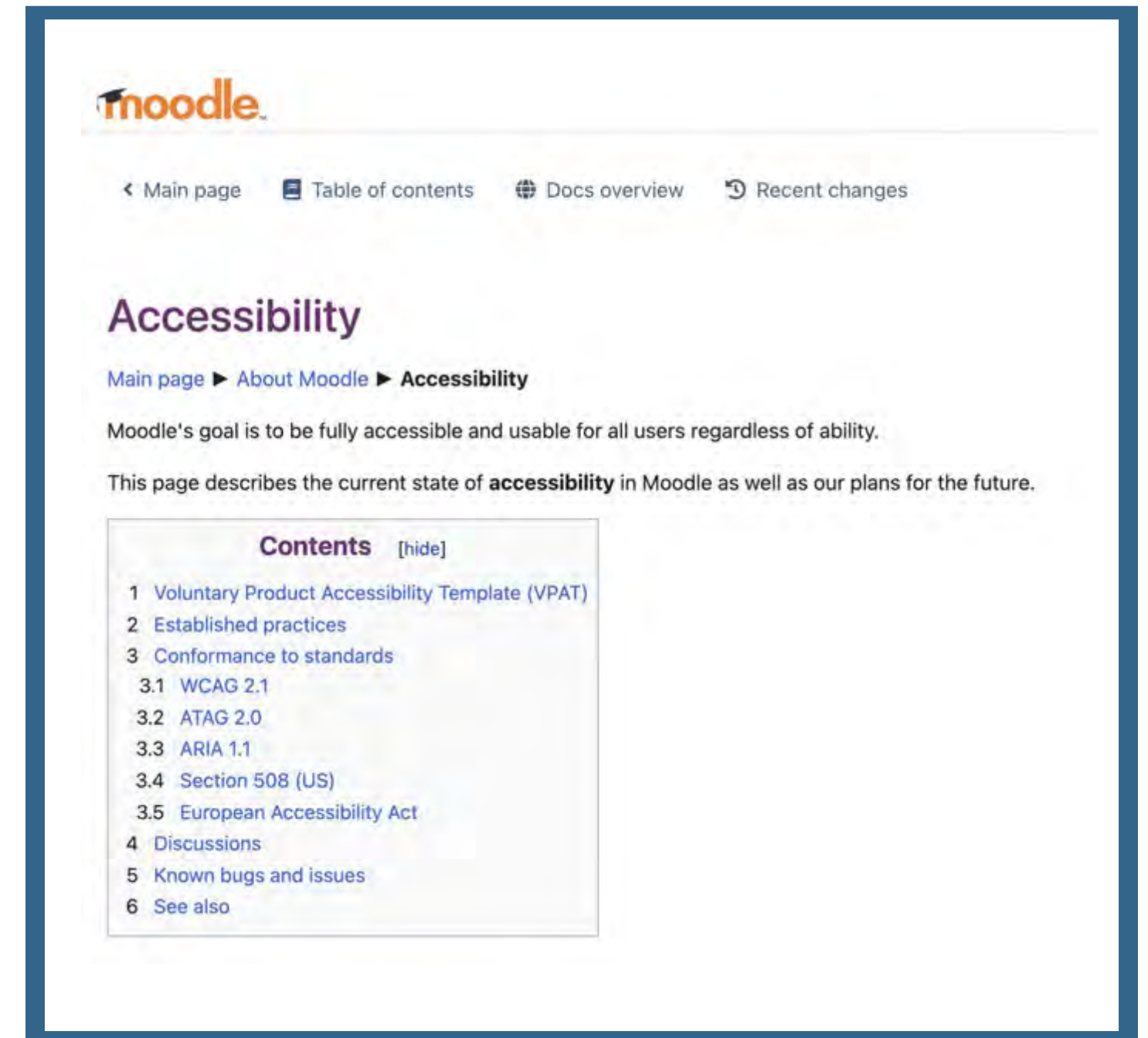
<u>https://cast.org/products-services/resources/2020/udl-tips-assessments</u>

Case Study:

Moodle Accessibility Features

- Overview of Moodle's Accessible Features:
  - Customizable course formats
  - Screen reader support, and
  - Alternative text
- Moodle LMS version 4.0 achieved WCAG 2.1 AA Accessibility compliance.
- https://moodle.com/functionality-with-moodle/moodle-accessibility/

moodle.

‹ Main page   Table of contents   Docs overview   Recent changes

Accessibility

Main page ▶ About Moodle ▶ **Accessibility**

Moodle's goal is to be fully accessible and usable for all users regardless of ability.

This page describes the current state of **accessibility** in Moodle as well as our plans for the future.

Contents [hide]

1 Voluntary Product Accessibility Template (VPAT)
2 Established practices
3 Conformance to standards
 3.1 WCAG 2.1
 3.2 ATAG 2.0
 3.3 ARIA 1.1
 3.4 Section 508 (US)
 3.5 European Accessibility Act
4 Discussions
5 Known bugs and issues
6 See also

https://docs.moodle.org/405/en/Accessibility

Case Study:

Blackboard Accessibility

- Overview of Blackboard's Inclusive Features:
    - Support for assistive technologies
    - Customizable content delivery, and
    - Closed captioning
- Blackboard claims its products are designed and developed with WCAG in mind.

    https://help.blackboard.com/Learn/Accessibility_Overview

Accessibility overview in Blackboard Learn

Video and transcript on Youtube: Accessibility Overview in Blackboard Learn
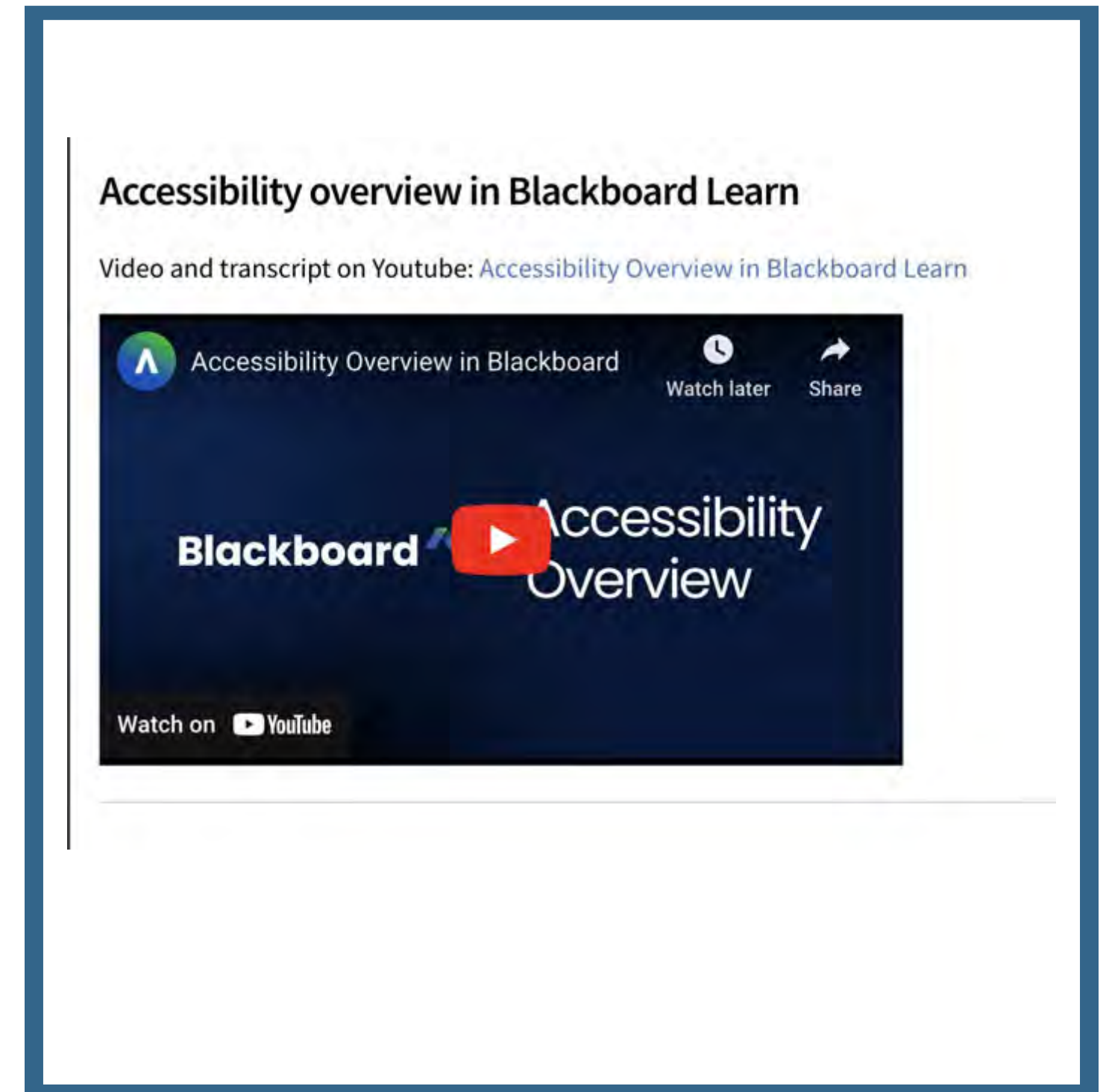
https://help.blackboard.com/Learn/Accessibility_Overview#accessibility_video

Case Study: Canvas Accessibility

- Overview of Canvas's Inclusive Features:
  - Text-to-speech
  - Alternative media formats, and
  - Visual customization
- Canvas platform is committed to W3C's WAI and Section 508 guidelines. -

https://www.instructure.com/products/canvas/accessibility

Canvas Voluntary Product Accessibility Template (VPAT)

This Voluntary Product Accessibility Template, or VPAT, is a tool that administrators and decision-makers can use to evaluate Canvas' conformance with the accessibility standards under Section 508 of the Rehabilitation Act and WCAG 2.1 AA.

Accessibility Statement

Instructure is committed to ensuring its products are inclusive and meet the diverse accessibility needs of our users. Canvas LMS strives for WCAG 2.1 Level A/AA and Section 508 conformance. Regular testing (both internal and by a third party) is conducted to identify conformance issues, with processes in place for timely remediation of accessibility issues that are identified. Canvas is a complex and broad system. The statements below are accurate as of the date indicated.

Canvas has been evaluated by Instructure and WebAIM according to WCAG 2.1 standards. Testing is regularly conducted using automated tools, assistive technology (such as screen readers, keyboard testing, etc.), and coding best practices. Third party accessibility evaluation occurs regularly with internal audits conducted with each release. Mechanisms are in place for logging and fixing accessibility defects.

https://www.instructure.com/products/canvas/accessibility

The Role of WCAG in E-Learning

What are WCAG Guidelines?

- WCAG ensures that online content is accessible to everyone, including students with disabilities.

- W3C's WAI prepared Web Content Accessibility Guidelines (WCAG) to define the international standard. - https://www.w3.org/WAI/standards-guidelines/wcag/

Website accessibility checklist:

☑ High-quality image alt-text
☑ Captions in video content
☑ Flexible color schemes
☑ Keyboard-friendly browsing
☑ Avoid flashy designs

☑ Small web page size
☑ Add an auto-fill option for forms
☑ Easy-to-identify links
☑ Descriptive section headings
☑ No spelling or grammatical errors

☑ Give additional options when users make mistakes
☑ Make your website elements predictable
☑ Use thoughtful and inclusive language
☑ High contrast between text and other elements

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Accessibility Laws & E-Learning (1)

Overview of Key Legal Frameworks

- **European Disability Strategy** - Plan for inclusion.

- **European Accessibility Act** – EU Accessibility rules.

- European Accessibility Act for e-Learning.

- EU Standards for e-Learning Accessibility and Inclusion

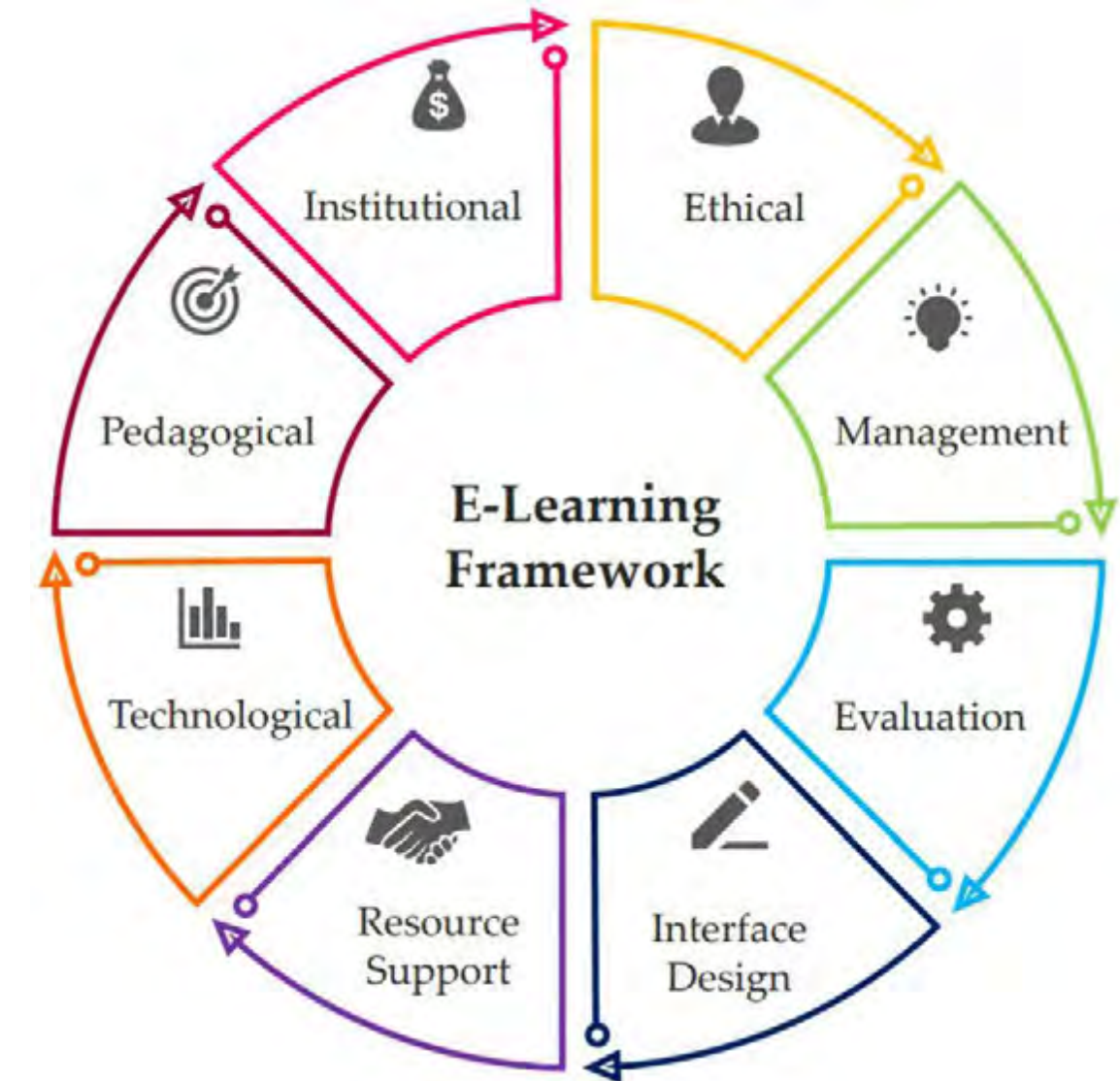- EU Commission for disability rights.

- EU Web Accessibility

Image References: https://aeldata.com/what-is-the-european-accessibility-act-2025/

Accessibility Laws & E-Learning (2)

How They Affect E-Learning Platforms

- Ensures equal access to education for students with disabilities.

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Tools for Creating Inclusive E-Learning (1)

Text-to-Speech and Speech-to-Text Tools

- Example Tools:
  - NVDA
  - Google Docs voice typing
- Google Docs has a <u>Voice Typing</u> feature as a quick audio to text converter. -

  <u>https://newsinitiative.withgoogle.com/resources/trainings/fundamentals/voice-typing-transcribe-audio-using-google-docs/</u>

<u>https://expertinsights.com/insights/top-ai-speech-to-text-and-text-to-speech-solutions/</u>

Tools for Creating Inclusive E-Learning (2)

Video Captioning Tools

- Example Tools:
  - Amara,
  - YouTube Auto-Captioning

- The Amara Editor, a cloud-based do-it-yourself software solution supports generating manual and automated video captioning.
  https://amara.org/caption-generator/

- https://amara.org/video-captions/

https://captioningstar.com/resources/10-useful-captioning-tools.pdf

Tools for Creating Inclusive E-Learning (3)

Adaptive Learning Technologies

- Example Tools:
  - Read&Write
  - Kurzweil Education

- Kurzweil Education claims its assistive technology products are built on UDL, allowing curriculum to be accessible to all students.
  https://www.kurzweiledu.com/
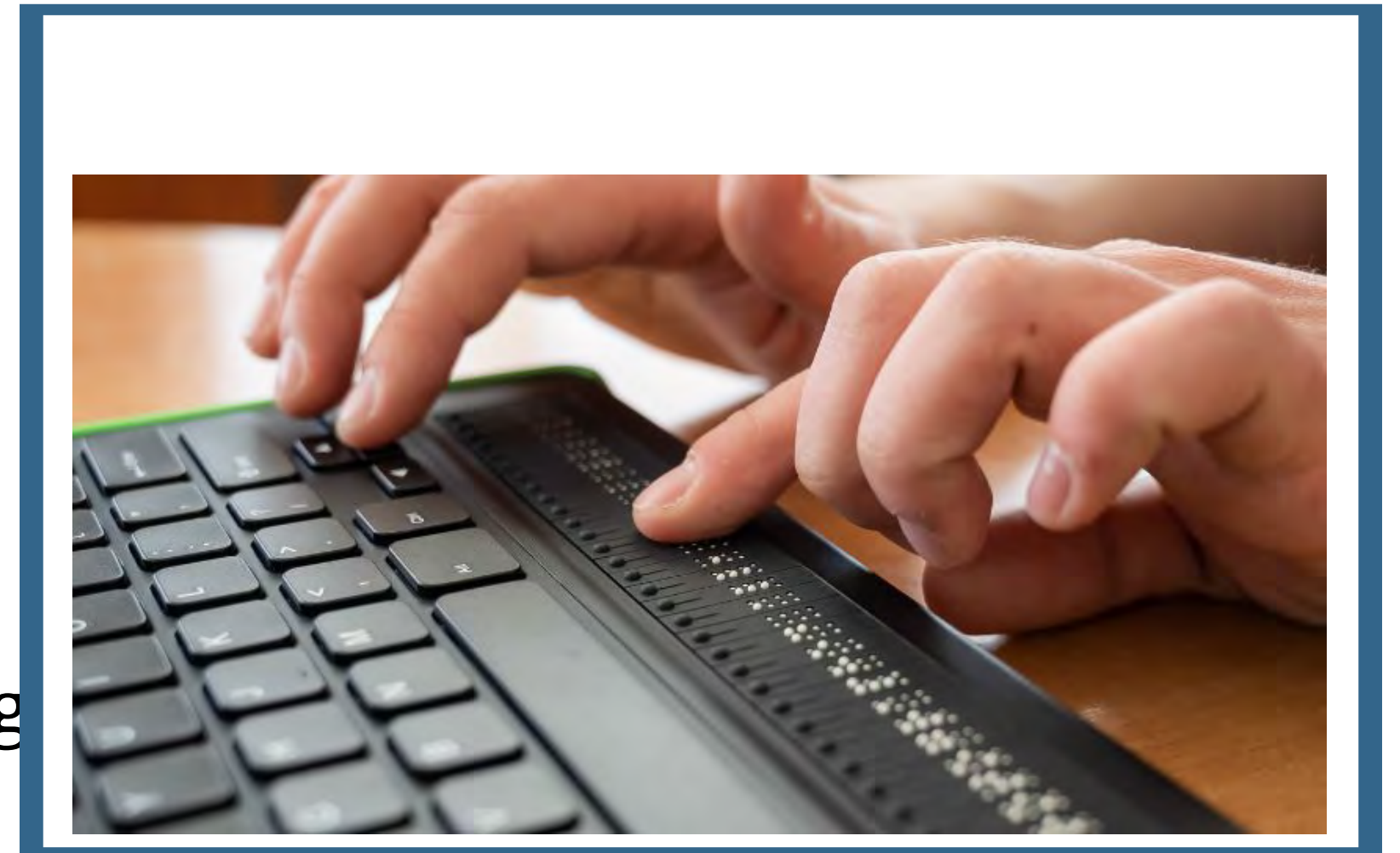
Image Reference: 2024 Guide to Choosing the Perfect Braille Keyboard for Your Needs (https://www.iamhable.com) Hable, Eindhoven, the Netherlands
https://www.iamhable.com/cdn/shop/articles/CHOose_the_best_braille_keyboard_for_blind_people_2024.png

Evaluating an E-Learning Platform (1)

Evaluation Criteria

- Is the platform accessible to all?
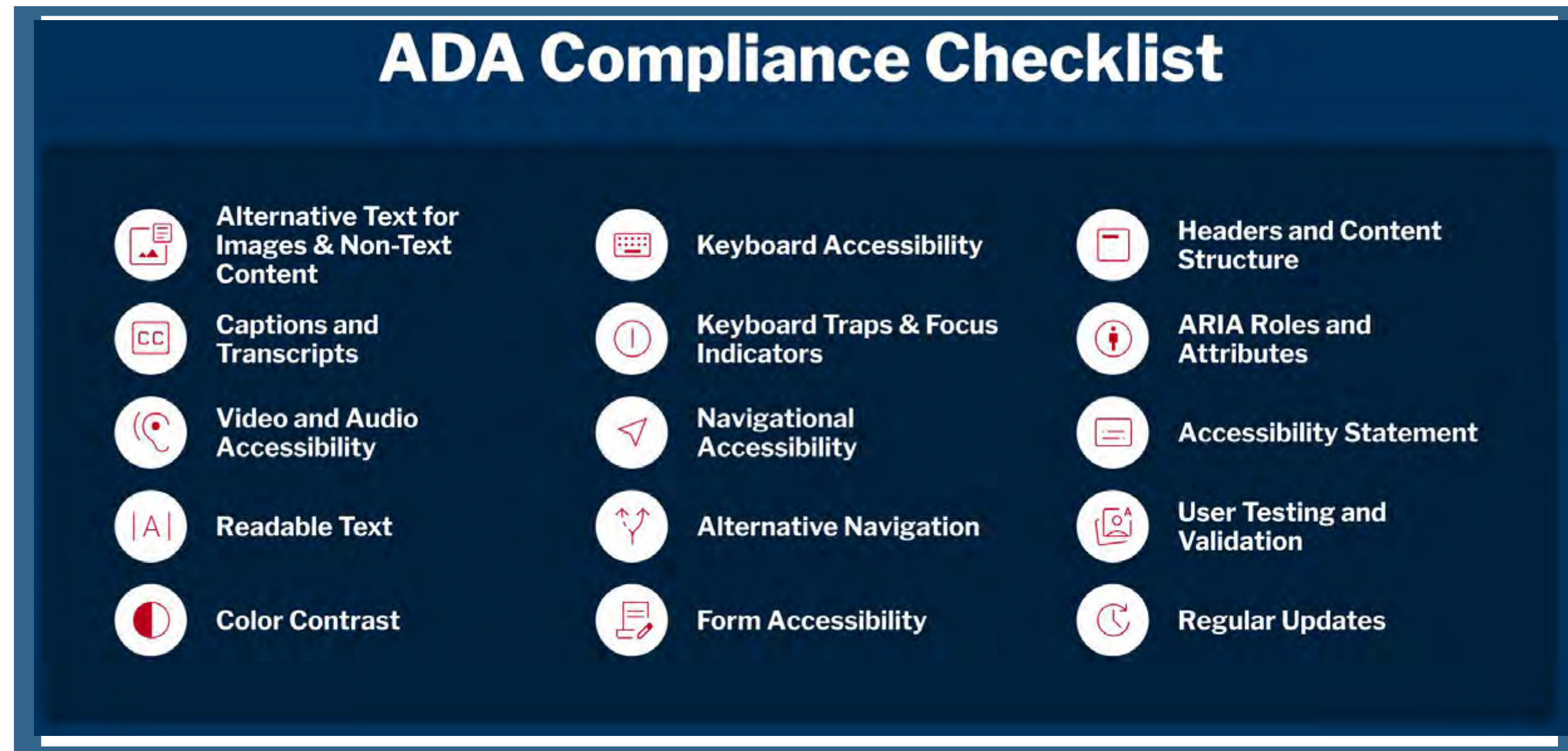- Are there customization options for students with special needs?

ADA Compliance Checklist

- Alternative Text for Images & Non-Text Content
- Captions and Transcripts
- Video and Audio Accessibility
- Readable Text
- Color Contrast
- Keyboard Accessibility
- Keyboard Traps & Focus Indicators
- Navigational Accessibility
- Alternative Navigation
- Form Accessibility
- Headers and Content Structure
- ARIA Roles and Attributes
- Accessibility Statement
- User Testing and Validation
- Regular Updates

Image Reference: Comprehensive ADA Compliance Checklist for Section 508 (US Rehabilitation Act) and Beyond, Americaneagle.com Brighton, UK
https://resources.americaneagle.com/aecom-blobs/images/default-source/blog-images/ada-compliance-checklist-.png

Evaluating an E-Learning Platform (2) Activity

- Read the [three (3) strategies for evaluating your online module](#).

- Choose one of the strategies to evaluate your e-Learning Platform

  ○ Using VLE Analytics to Measure Student Engagement
  ○ Using Forum Interactions to Assess Online Participation
  ○ Using Course Quality Review Rubrics

- References:

  ○ Slattery, D. M. (2020) Implementing Instructional Design Approaches to Inform your Online Teaching Strategies: https://www.facultyfocus.com/articles/online-education/online-course-design-and-preparation/implementing-instructional-design-approaches-to-inform-your-online-teaching-strategies/
  ○ World Wide Web Consortium (2021) How to Meet Web Content Accessibility Guidelines (WCAG) (Quick Reference): https://www.w3.org/WAI/WCAG21/quickref/

Building an Inclusive E-Learning Environment

Strategies for Educators

- Use multiple content formats,
- Encourage interaction, and
- Offer flexible assessments
- Microsoft with inclusive classroom tools aims to enable equitable education.

https://www.microsoft.com/en-us/education/products/learning-tools

Image Reference: Spotlight on Improving Teaching and Learning Through Equitable Assessment Systems, WestEd, 730 Harrison Street, San Francisco, CA, USA
https://wested2024.s3.us-west-1.amazonaws.com/wp-content/uploads/2024/10/08153205/EBulletin-Image_06-04-2024_Teachers-3.png

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Creating Inclusive Assignments and Assessments

- Allow students to choose how to present their work—essay, video, or presentation.
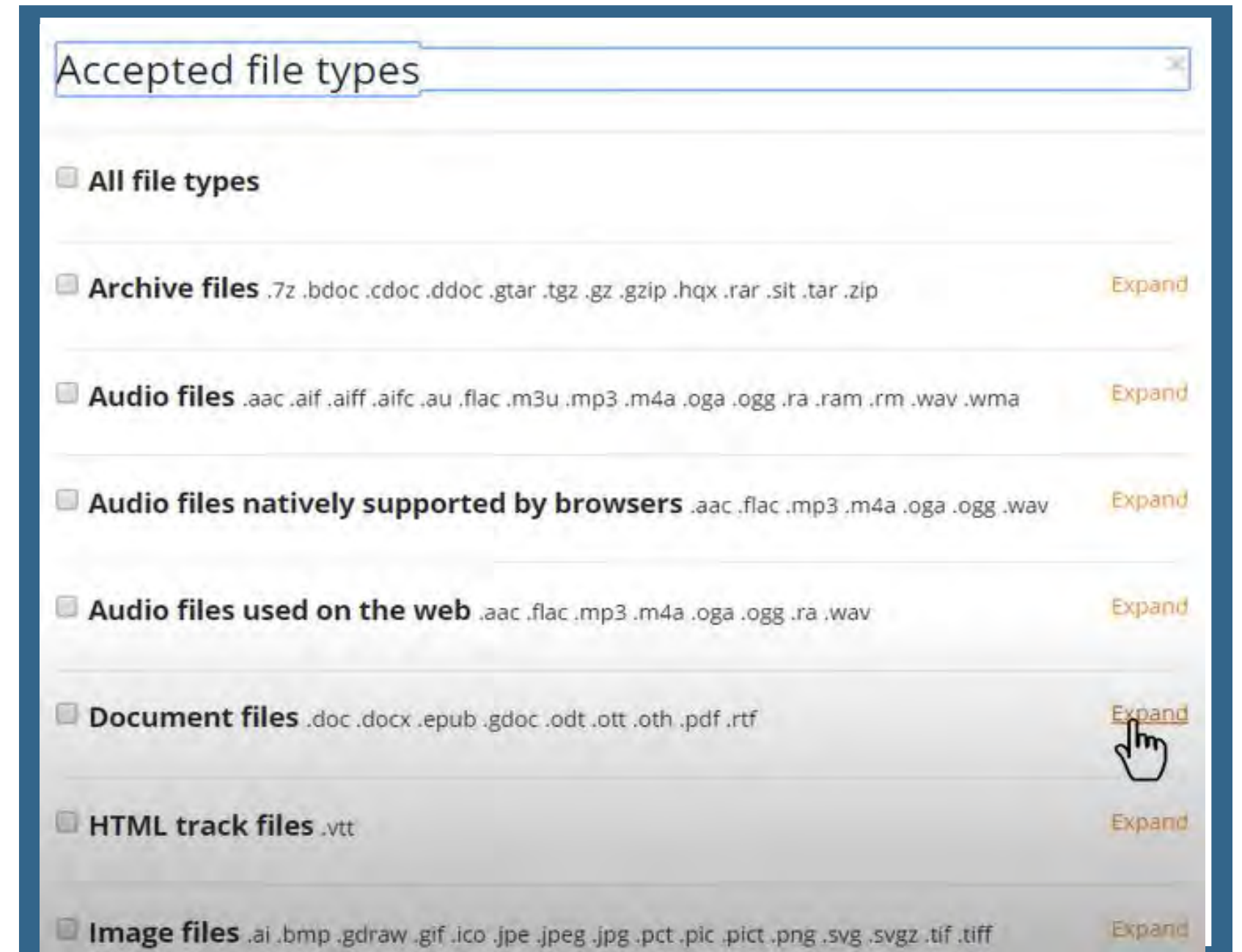

Image Reference: Screenshot captured from official Moodle's YouTube channel video, explaining the diverse assessment submission types within Moodle.

Video URL: https://www.youtube.com/watch?v=vN1DlHeZkw4

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Interactive Discussion

- Making e-learning more inclusive?
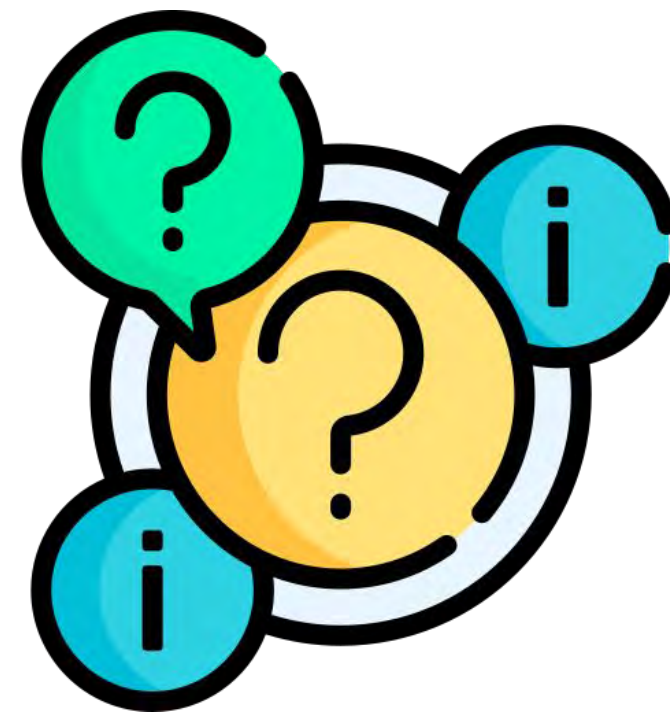
  o **Challenges** and
  o Opportunities

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Conclusion & Key Takeaways

- Key Points:
  - **Inclusive teaching and e-learning** benefit all students.
  - **Accessible design features** are crucial in ensuring equal opportunities for learning.
  - **Tools and resources exist** to help educators make content accessible.
- **Learning Outcome:** Identify Inclusive Features in E-Learning Platforms

Image Reference: C4 Group, 180 Castlewold Drive, Bethlehem, Tauranga 3110, NZ, Virtual Classroom Training
https://c4group.co.nz/wp-content/uploads/2021/09/555.jpg

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Do you have any questions?

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