



# Digital Accessibility



**WINONA**  
STATE UNIVERSITY  
COLLEGE OF EDUCATION  
*Leadership Education Department*




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**ITEC 2023 #ITECIA**

STEVE BAULE

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A close-up photograph of a person's face, focusing on their eyes and nose. They are wearing dark-rimmed glasses. The image is slightly blurred and has a dark, semi-transparent overlay. White text is superimposed on the image, centered over the person's face.

“When speaking of disabilities, the blind and their needs are most often used as an example. It is deceptively simplistic since accessibility is something most of the population can benefit from.” — Marcus Österberg

Marcus Österberg @osterbergmarcus

# Basic Accessibility Issues

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- Use accessibility checkers in Office and other productivity software
- Use WebAIM or another web-based accessibility check
- Use closed captions and audio transcripts in videos
- Consider translation sites for ESL students/parents

# Color Contrasts

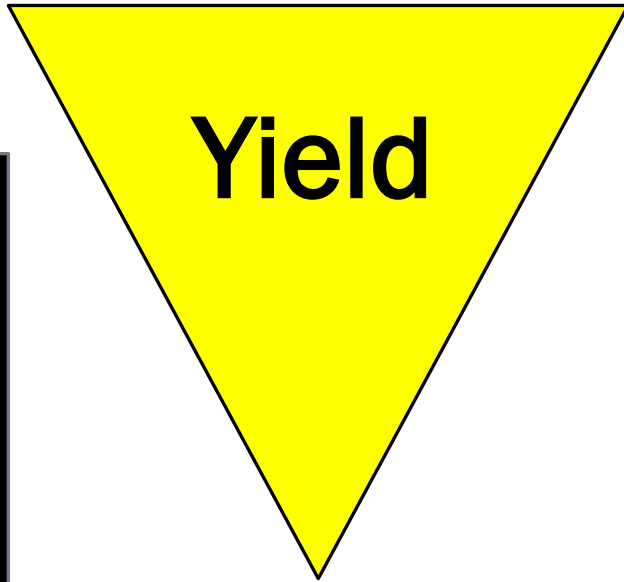
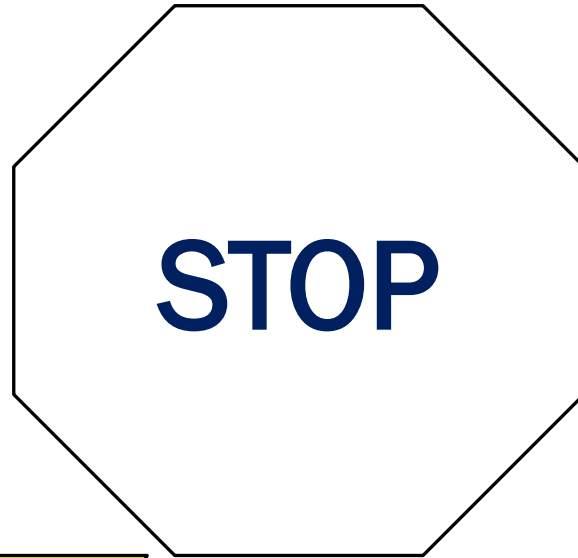
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WCAG 2.0 level AA requires a contrast ratio of at least 4.5:1 for normal text and 3:1 for large text. WCAG 2.1 requires a contrast ratio of at least 3:1 for graphics and user interface components (such as form input borders). WCAG Level AAA requires a contrast ratio of at least 7:1 for normal text and 4.5:1 for large text.

Large text is defined as 14 point (typically 18.66px) and bold or larger, or 18 point (typically 24px) or larger.

**Hint:** [Colorzilla](#) is an excellent tool for extracting the color value from any page element. Additionally, [WAVE](#) can analyze contrast ratios for all page text elements at once.

Use [this link contrast checker](#) to evaluate links that are identified using color alone.




[Home](#) > [Resources](#) > Contrast Checker

**Foreground Color**

#FFFFFF


Lightness



**Background Color**

#4B08A1

Lightness



Contrast Ratio

**11.36:1**

[permalink](#)

## Normal Text

WCAG AA: **Pass**

WCAG AAA: **Pass**

The five boxing wizards jump quickly.

## Large Text

WCAG AA: **Pass**

WCAG AAA: **Pass**

The five boxing wizards jump quickly.

## Graphical Objects and User Interface Components

# Alternative Text for Images



The screenshot displays a digital accessibility tool interface. On the left, a sign is shown with a wheelchair icon and the word "ACCESSIBLE" in large, bold, black letters. Below the sign, the text "Digital Accessibility" is displayed in a large, bold, black font. Underneath this, the name "STEVE BAULE" is listed, followed by his title "CHAIR, LEADERSHIP EDUCATION" and affiliation "WINONA STATE UNIVERSITY". A blue link for his email, "STEVEN.BAULE@WINONA.EDU", is provided. On the right, an "Alt Text" panel is open, containing a text input field with the text "Handicapped sign". Below the input field is a button labeled "Generate alt text for me". At the bottom of the panel, there is a checkbox labeled "Mark as decorative" and a link "Give feedback on this alt text".

Alt Text

How would you describe this object and its context to someone who is blind or low vision?

- The subject(s) in detail
- The setting
- The actions or interactions
- Other relevant information

*(1-2 detailed sentences recommended)*

Handicapped sign

Generate alt text for me

Mark as decorative ⓘ

[Give feedback on this alt text](#)

## Informative Links not “click here”

Screen readers can scan for links, so informative link text is helpful. It's best to use the title of the page as the linked text. For example, if you link to your profile page, the linked text should say "my profile," not "click here."



This image by Unknown author is licensed under CC BY-NC

### Alt Text

How would you describe this object and its context to someone who is blind or low vision?

- The subject(s) in detail
- The setting
- The actions or interactions
- Other relevant information

*(1-2 detailed sentences recommended)*

A picture containing icon

Description automatically generated

- Approve alt text ⓘ
- Mark as decorative ⓘ

[Give feedback on this alt text](#)



# Informative Links not “click here”

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Screen readers can scan for links, so informative link text is helpful. It's best to use the title of the page as the linked text. For example, if you link to your profile page, the linked text should say "my profile," not "click here."



# *In Blackadder JTC Script*

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- *AVOID ALL CAPITALS*
- *Use left (or right) justified text*
- *Use plain fonts*
- *Avoid scripts, italic and decorative fonts*
- *Be consistent*
- *Use as large of a font as reasonable*

# Text Size and Alignment

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- AVOID ALL CAPITALS
- Use left (or right) justified text
- Use plain fonts
- Avoid scripts, italic and decorative fonts
- Be consistent
- Use as large of a font as reasonable

# Best Fonts for Presentations

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- Verdana
- Calibri
- Palatino
- Tahoma
- Georgia
- Raleway
- Gill Sans
- Corbel
- Segoe
- Garamond
- Century Gothic

# Minimum Font Size

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- To determine the minimum font size for accessible media, the distance from the most distance seat should be measured in inches.
- That number multiplied by 0.11 will give the minimum projected height of an accessible font in inches. So in a room where the farthest seat is 20 feet away, the minimum projected height would be 2.64 inches.

# Use Text Not Formatting

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- Don't rely on **color** or *other formatting alone* to identify important points
- Add text such as important, critical, etc.

# Use Bullets not Narrative Listings

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Colors you can use:

- Red
- Blue
- Green
- Yellow
- Brown

Colors you can use for this project include, red, blue, green, yellow, and brown

# Use Navigation Landmarks

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These include:

- Page numbers
- Headers and footers
- Headings



# Guidelines for Magnification Software

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- Avoid using complex background images or textures that could obscure text when magnified. Solid color backgrounds work best.
- If using columns, make sure text reflows properly when zoomed in. Avoid setting fixed column widths.
- Responsive web pages generally work this way, so depending upon the screen size, the web page modifies itself.
- Enable text reflow in PDFs so users can resize text without scrolling horizontally on each line. Reflowable PDFs reformat dynamically.
- Don't use horizontal scrolling. Screen reader users rely on vertical scrolling with linear content flow.

# Guidelines for Magnification Software, cont.

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- Allow for 120% page magnification without content getting cut off or requiring scrolling horizontally.
- Avoid overlapping text boxes, as this can cause issues with magnification and reading order.



# Tables

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Grade Distribution

Letter Grade	Percentage
A	90 – 100%
B	80 – 89.99%
C	70 – 79.99%
D	60 – 69.99%
F	< 60%

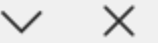
- Tables should be used for data only, not for layout.
- Make tables as simple as possible — they should have no merged or split cells.
- Complex tables should be broken down into multiple simple tables.
- Tables in Word should always contain a header row.
- Table rows shouldn't split across multiple pages.
- Tables should include Alt Text to describe its content or structure for those who cannot see it.

[From: Create Accessible Tables in MS Word - eSAIL \(tamu.edu\)](#)

# Sample Table Alt Text

Holiday	Day	Month
New Year's Day	1	January
Groundhog Day	2	February
Ides of March	15	March

## Alt Text



How would you describe this object and its context to someone who is blind or low vision?

- The subject(s) in detail
- The setting
- The actions or interactions
- Other relevant information

*(1-2 detailed sentences recommended)*

A listing of holidays including the day and month each is celebrated.

Mark as decorative

# Don't "Fake" Tables

[Create Accessible Tables in MS Word - eSAIL \(tamu.edu\)](#)

Ice Cream Preferences			
Flavor	Dislike	Neutral	Like
Pistachio	9	13	4
Vanilla	13	6	7
Strawberry	10	10	6
Chocolate	6	5	15
Cookie Dough	9	7	10
Mint Chocolate Chip	8	10	8
Vanilla Bean	13	7	6
Butter Pecan	10	8	8
Cake Batter	12	4	10

How a screen reader will read it:

Ice cream preferences, Flavor, Dislike, Neutral, Like, Pistachio, 9, 13, 4, Vanilla, 13, 6, 7, Strawberry, 10, 10, 6, Chocolate, 6, 5, 15, Cookie Dough, 9, 7, 10, Mint Chocolate Chip, 8, 10, 8, Vanilla Bean, 13, 7, 6, Butter Pecan, 10, 8, 8, Cake Batter, 12, 4, 10.

# Captions and Transcripts

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- Provide text transcripts for any audio content for those who are deaf or hard of hearing.
- Zoom will generate an audio transcript automatically
- On websites; providing a transcript along with videos is appropriate to meet the needs of those with hearing issues
- Some tools will also translate the transcript to another language

**Keyboard navigation  
is important for  
websites and LMSs**

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# Google Accessibility

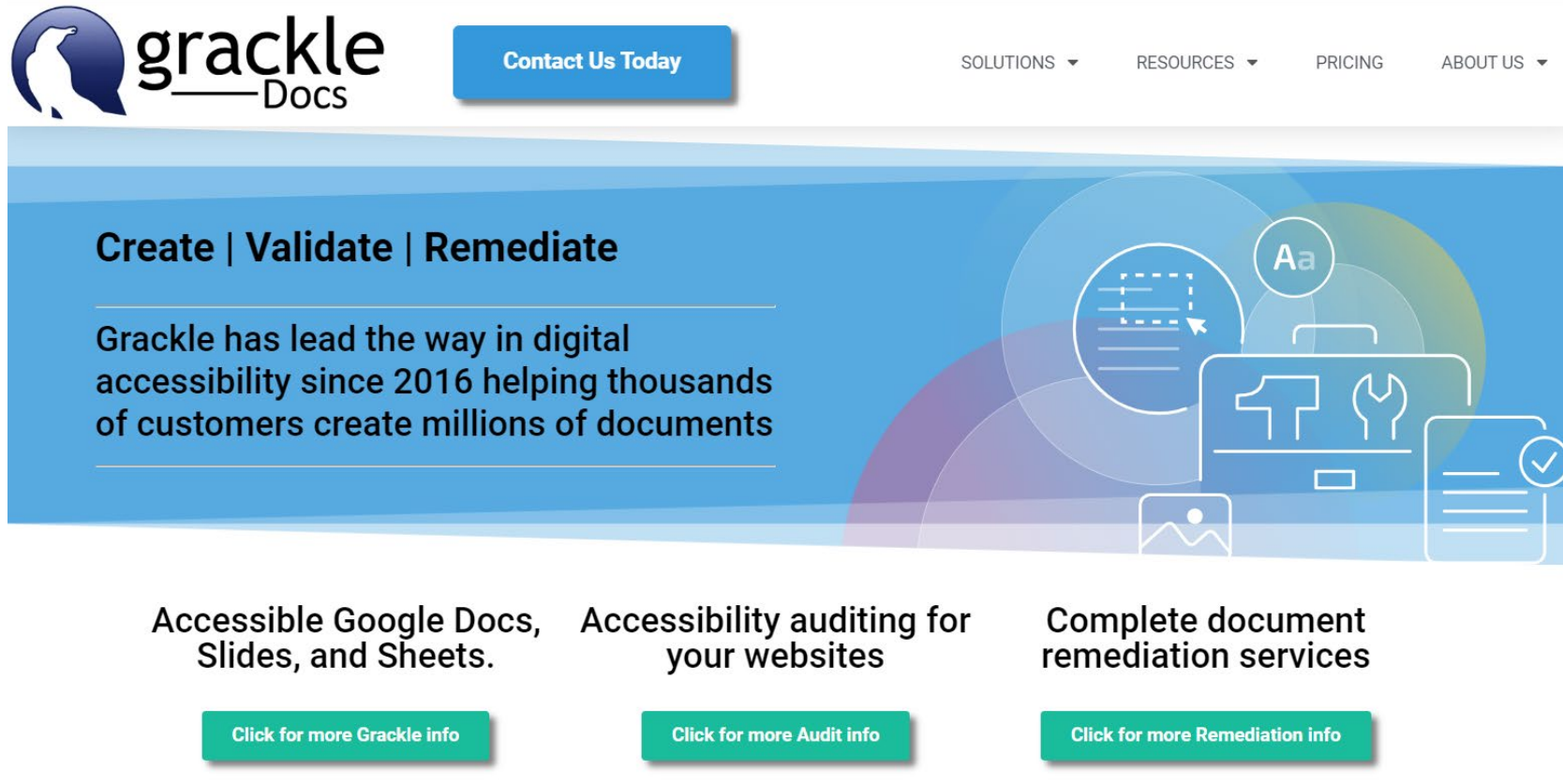
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Tools: Use the Google developer tools to determine if the color contrast on my current page follows the WebAIM rules. Under "Audits", you can check "Accessibility" to run an audit your current webpage.

Google does provide some accessible templates; search for templates using the term accessible.



# Google has no Accessibility Checker



The image shows a screenshot of the Grackle Docs website. At the top left is the Grackle Docs logo, featuring a blue silhouette of a grackle and the text "grackle Docs". To the right of the logo is a blue button that says "Contact Us Today". Further right are four navigation links: "SOLUTIONS", "RESOURCES", "PRICING", and "ABOUT US", each with a small downward arrow. Below the navigation is a large blue banner with the text "Create | Validate | Remediate" and a paragraph: "Grackle has lead the way in digital accessibility since 2016 helping thousands of customers create millions of documents". To the right of the text are several icons: a document with a dashed box and arrow, a circle with "Aa", a toolbox with a wrench and screwdriver, a document with a checkmark, and a photo icon. Below the banner are three columns of text, each with a corresponding green button: "Accessible Google Docs, Slides, and Sheets." with "Click for more Grackle info", "Accessibility auditing for your websites" with "Click for more Audit info", and "Complete document remediation services" with "Click for more Remediation info".

**grackle**  
Docs

Contact Us Today

SOLUTIONS ▾ RESOURCES ▾ PRICING ABOUT US ▾

**Create | Validate | Remediate**

Grackle has lead the way in digital accessibility since 2016 helping thousands of customers create millions of documents

Accessible Google Docs, Slides, and Sheets.

Accessibility auditing for your websites

Complete document remediation services

Click for more Grackle info

Click for more Audit info

Click for more Remediation info

# Converting Google Docs

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## Google Docs to PDF

At this time Google Docs are not able to produce accessible PDF versions. If you export your Google Docs file as a PDF document, the accessibility information will not be included in the resulting PDF version. Instead, download your Google Doc as a Microsoft Word file to run the Accessibility Checker and convert to an accessible PDF.

<https://uit.stanford.edu/accessibility/guides/google-docs>

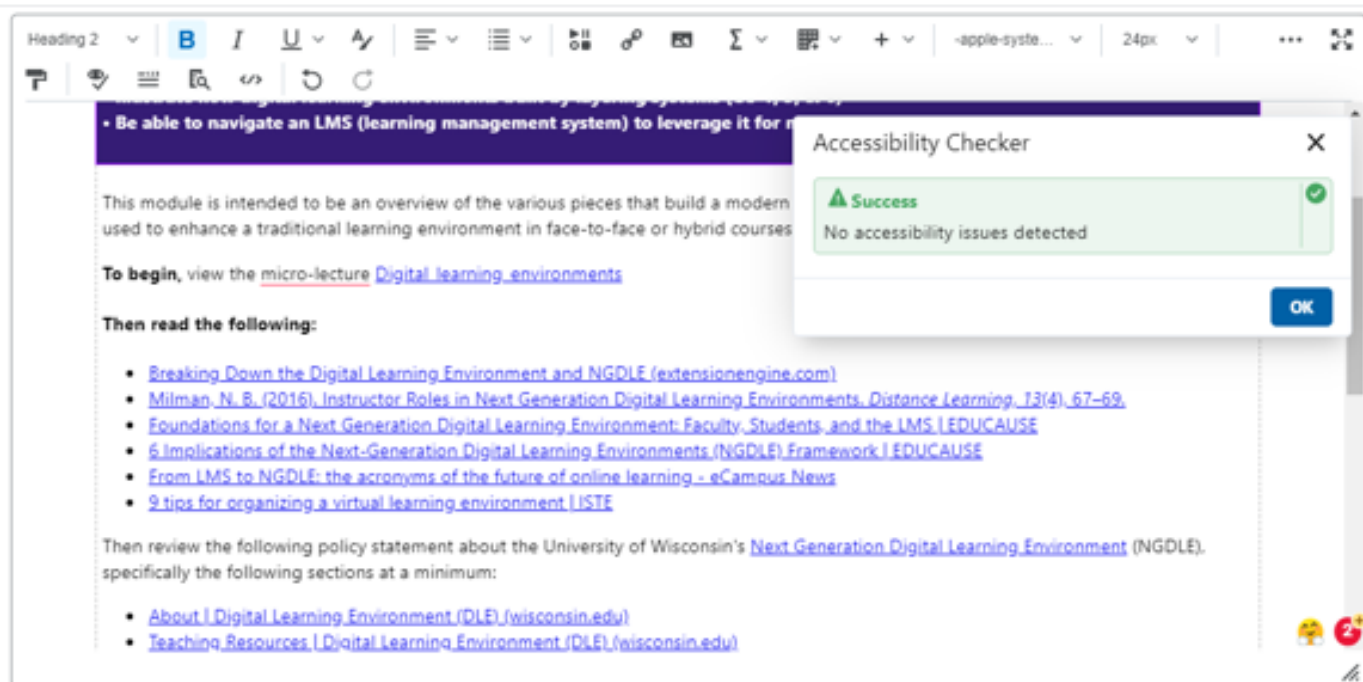
<https://it.umn.edu/services-technologies/how-tos/google-docs-use-accessibility-checker>

# Complete the following steps to run the Office Accessibility Checker:

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1. Open the Word document.
2. Select the File tab.
3. Select Info from the left-hand menu.
4. Click the Check for Issues button.
5. Select Check Accessibility from the drop-down menu.
6. Review the list of potential errors in the Accessibility Checker panel.

# D2L Accessibility checker



The screenshot shows a slide editor interface with a toolbar at the top. The slide content includes a heading, a paragraph, a link, and a list of references. An 'Accessibility Checker' dialog box is overlaid on the slide, displaying a green success message: 'Success No accessibility issues detected'. The dialog box has a close button (X) and an 'OK' button.

Heading 2 | B | I | U | A | List | Table | Link | Unlink | Bold | Italic | Underline | Text Color | Background Color | Font Size | 24px

• Be able to navigate an LMS (learning management system) to leverage it for r

This module is intended to be an overview of the various pieces that build a modern used to enhance a traditional learning environment in face-to-face or hybrid courses

To begin, view the [micro-lecture Digital learning environments](#)

Then read the following:

- [Breaking Down the Digital Learning Environment and NGDLE \(extensionengine.com\)](#)
- [Milman, N. B., \(2016\). Instructor Roles in Next-Generation Digital Learning Environments. Distance Learning, 13\(4\), 67-69.](#)
- [Foundations for a Next-Generation Digital Learning Environment: Faculty, Students, and the LMS | EDUCAUSE](#)
- [6 Implications of the Next-Generation Digital Learning Environments \(NGDLE\) Framework | EDUCAUSE](#)
- [From LMS to NGDLE: the acronyms of the future of online learning - eCampus News](#)
- [9 tips for organizing a virtual learning environment LISTE](#)

Then review the following policy statement about the University of Wisconsin's [Next-Generation Digital Learning Environment \(NGDLE\)](#), specifically the following sections at a minimum:

- [About | Digital Learning Environment \(DLE\) \(wisconsin.edu\)](#)
- [Teaching Resources | Digital Learning Environment \(DLE\) \(wisconsin.edu\)](#)

## Accessibility

### Inspection Results

#### Check reading order

Slide 1

Slide 2

Slide 6

Slide 7

Slide 10

#### Tips

#### Duplicate slide title

Color contrasts (Slide 6)

- Keep accessibility checker running while I work

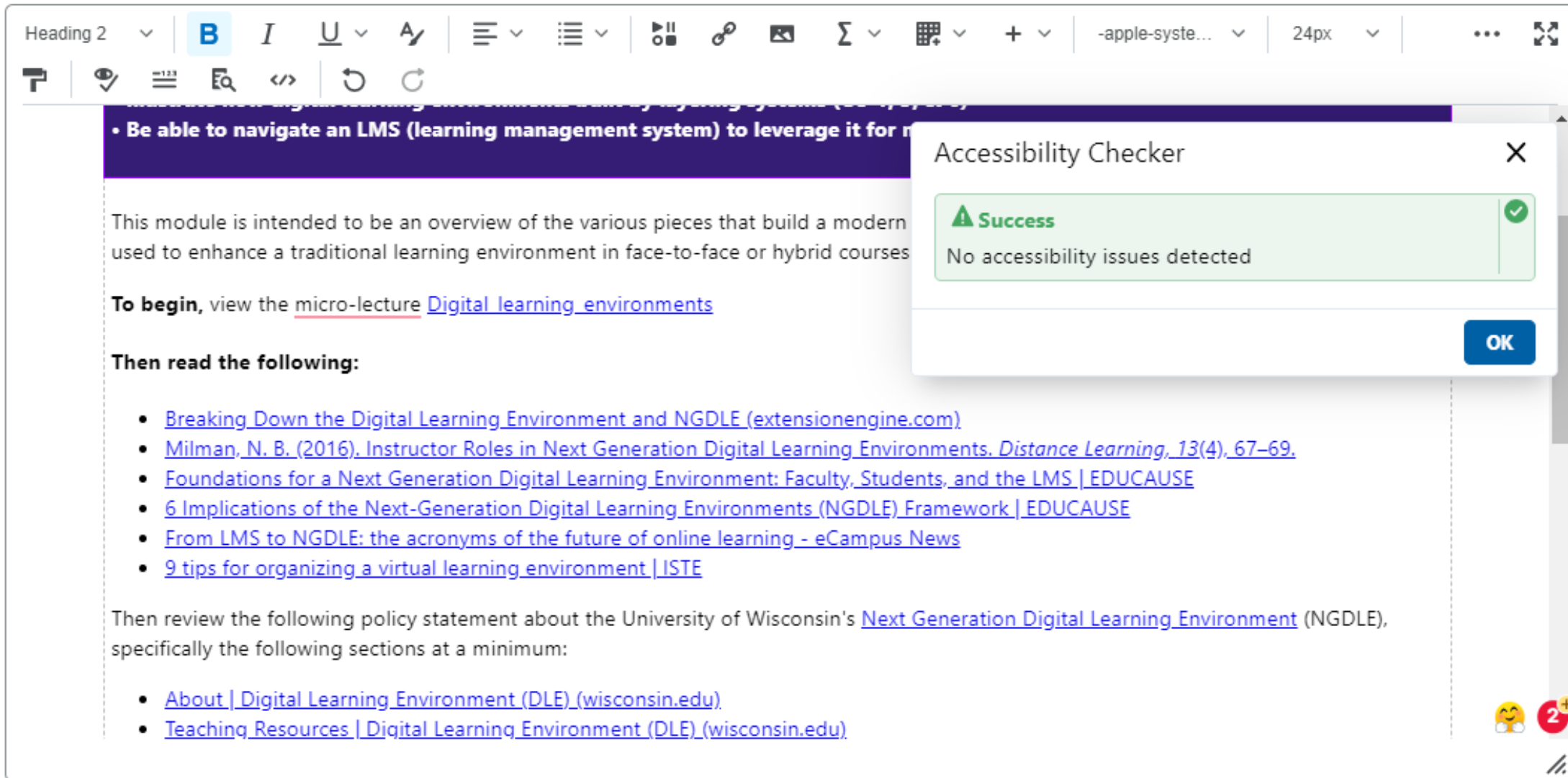
#### Additional Information

##### Why Fix?

People who cannot view the slide will hear slide text, shapes, and content read back in a specific order. You should verify that the reading order and labels will make sense in the order they will be read back.

##### Steps To Fix:

# D2L Accessibility checker



The screenshot shows a rich text editor interface with a toolbar at the top. The toolbar includes options for heading (Heading 2), bold (B), italic (I), underline (U), strikethrough (A/), bulleted list, numbered list, link, unlink, insert table, insert image, and font size (24px). Below the toolbar, a purple banner contains the text: "• Be able to navigate an LMS (learning management system) to leverage it for n".

The main content area contains the following text:

This module is intended to be an overview of the various pieces that build a modern used to enhance a traditional learning environment in face-to-face or hybrid courses

**To begin**, view the micro-lecture [Digital learning environments](#)

**Then read the following:**

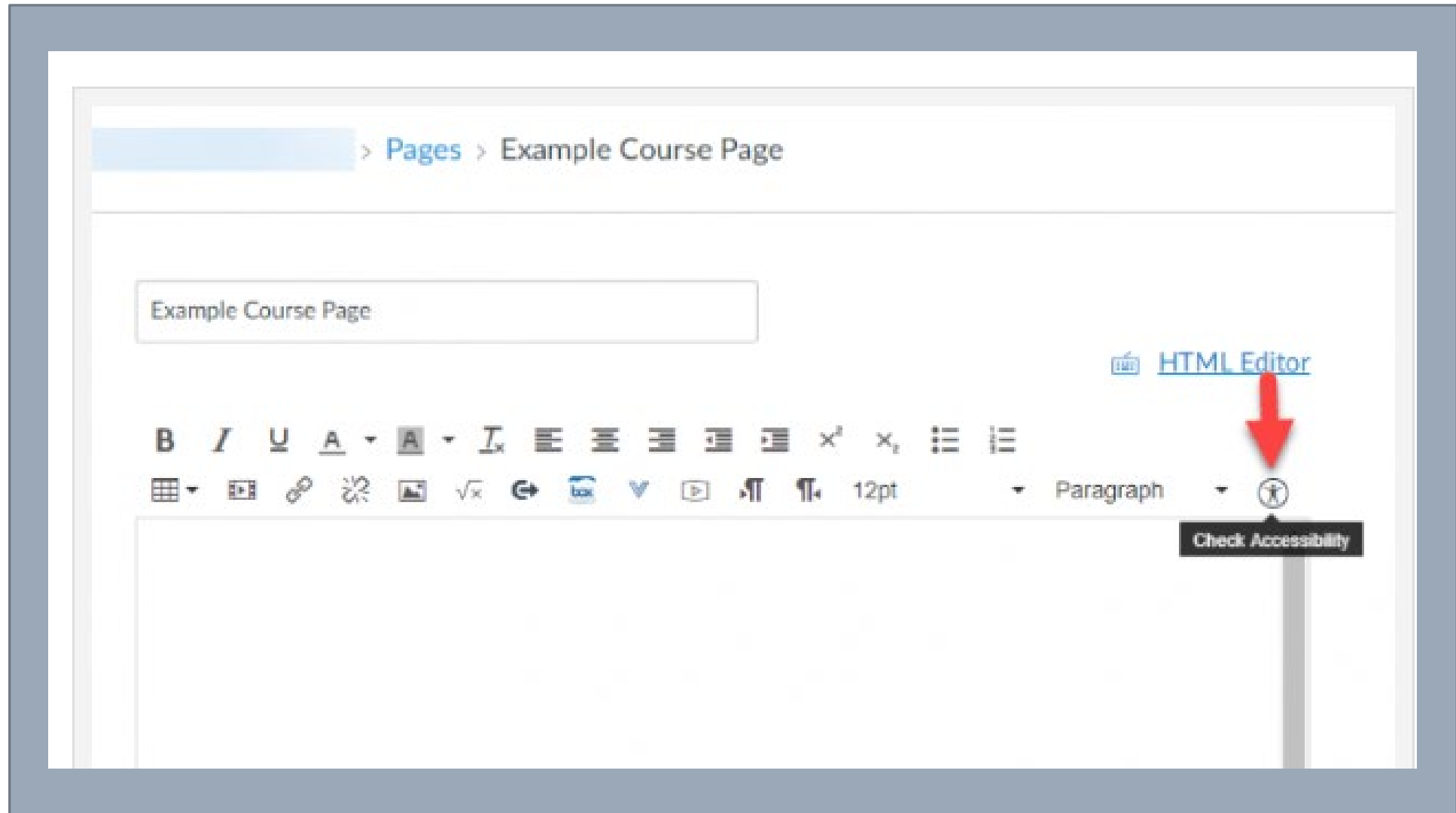
- [Breaking Down the Digital Learning Environment and NGDLE \(extensionengine.com\)](#)
- [Milman, N. B. \(2016\). Instructor Roles in Next Generation Digital Learning Environments. \*Distance Learning\*, 13\(4\), 67-69.](#)
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- [From LMS to NGDLE: the acronyms of the future of online learning - eCampus News](#)
- [9 tips for organizing a virtual learning environment | ISTE](#)

Then review the following policy statement about the University of Wisconsin's [Next Generation Digital Learning Environment](#) (NGDLE), specifically the following sections at a minimum:

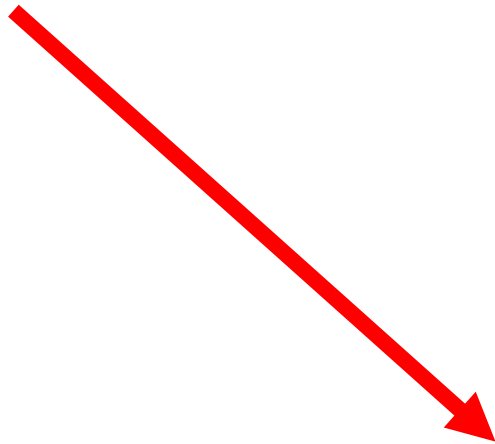
- [About | Digital Learning Environment \(DLE\) \(wisconsin.edu\)](#)
- [Teaching Resources | Digital Learning Environment \(DLE\) \(wisconsin.edu\)](#)

An "Accessibility Checker" dialog box is overlaid on the right side of the page. It features a green header with a checkmark icon and the text "Success No accessibility issues detected". An "OK" button is located at the bottom right of the dialog box. In the bottom right corner of the page, there is a smiley face emoji and a red circle with the number "2+".

# CANVAS



# Acrobat



All tools Edit Convert Sign

Find text or tools 🔍 | 📄 🔄 🖨️ | 📌 🔗 ✉️

### All tools

- Measure objects
- Compare files
- Add rich media**
- Design a new page
- Send for comments
- Use guided actions
- Prepare for accessibility
- Apply PDF standards

Get PDFs e-signed. Recipients sign online for free.

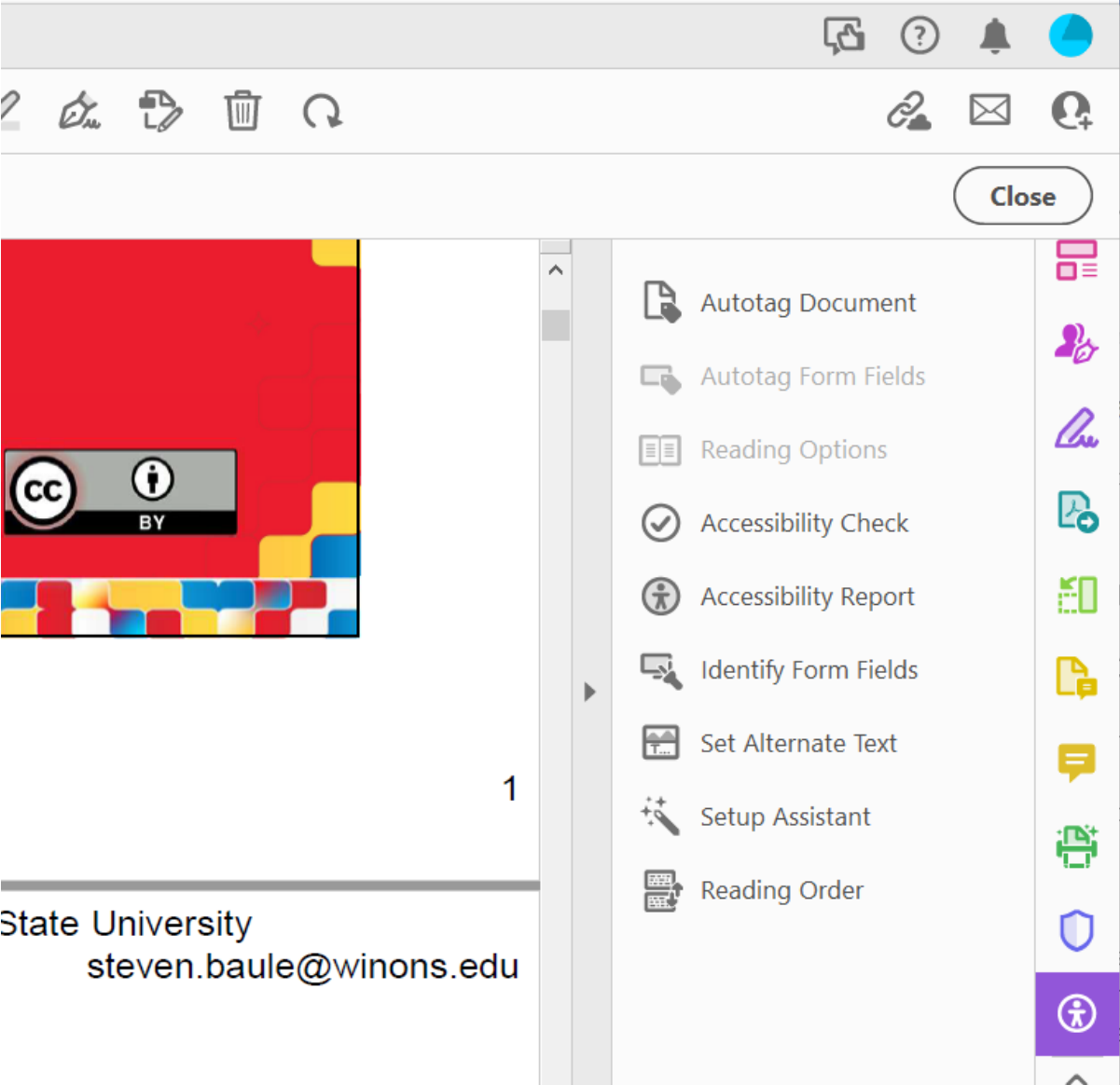
[Request e-signatures](#)

Problem Statement, Title, and Research Que

1  
6  
Comm  
Matt

8.50 x 11.00 in

# Accessibility Options



The screenshot shows a document viewer interface. At the top, there is a toolbar with icons for editing, deleting, and undo. Below the toolbar is a "Close" button. The main content area displays a document with a red background and a Creative Commons Attribution (CC BY) license logo. A vertical sidebar on the right contains a list of accessibility options:

- Autotag Document
- Autotag Form Fields
- Reading Options
- Accessibility Check
- Accessibility Report
- Identify Form Fields
- Set Alternate Text
- Setup Assistant
- Reading Order

At the bottom of the page, the text "State University" and the email address "steven.baule@winons.edu" are displayed.



# Acrobat Accessibility Checker Dialog Box

Accessibility Checker Options ✕

Report Options

Create accessibility report

Folder: C:\Users\wj4582nk\Desktop Choose...

Attach report to document

Page Range

All pages in document  Pages from  to

Checking Options (31 of 32 in all categories)

Category:  ▾

Accessibility permission flag is set

Document is not image-only PDF

Document is tagged PDF

Document structure provides a logical reading order

Text language is specified

Document title is showing in title bar

Bookmarks are present in large documents

Document has appropriate color contrast

Select All Clear All

Show this dialog when the Checker starts

Help Start Checking Cancel

# Accessibility Report

Filename: 16.20\_EDS 691, 692, 693 Syllabus.pdf

Report created by: [Enter personal and organization information through the Preferences > Identity dialog.]

Organization:

## Summary

The checker found problems which may prevent the document from being fully accessible.

- Needs manual check: 2
- Passed manually: 0
- Failed manually: 0
- Skipped: 1
- Passed: 13
- Failed: 16

## Detailed Report

### Document

Rule Name	Status	Description
<a href="#">Accessibility permission flag</a>	Passed	Accessibility permission flag must be set
<a href="#">Image-only PDF</a>	Passed	Document is not image-only PDF
<a href="#">Tagged PDF</a>	Failed	Document is tagged PDF
<a href="#">Logical Reading Order</a>	Needs manual check	Document structure provides a logical reading order
<a href="#">Primary language</a>	Failed	Text language is specified
<a href="#">Title</a>	Failed	Document title is showing in title bar
<a href="#">Bookmarks</a>	Passed	Bookmarks are present in large documents
<a href="#">Color contrast</a>	Needs manual check	Document has appropriate color contrast

## Page Content

Rule Name	Status	Description
<a href="#">Tagged content</a>	Failed	All page content is tagged
<a href="#">Tagged annotations</a>	Passed	All annotations are tagged
<a href="#">Tab order</a>	Passed	Tab order is consistent with structure order
<a href="#">Character encoding</a>	Passed	Reliable character encoding is provided
<a href="#">Tagged multimedia</a>	Passed	All multimedia objects are tagged
<a href="#">Screen flicker</a>	Passed	Page will not cause screen flicker
<a href="#">Scripts</a>	Passed	No inaccessible scripts
<a href="#">Timed responses</a>	Passed	Page does not require timed responses
<a href="#">Navigation links</a>	Passed	Navigation links are not repetitive

## Forms

Rule Name	Status	Description
<a href="#">Tagged form fields</a>	Passed	All form fields are tagged
<a href="#">Field descriptions</a>	Passed	All form fields have description

## Alternate Text

Rule Name	Status	Description
<a href="#">Figures alternate text</a>	Failed	Figures require alternate text
<a href="#">Nested alternate text</a>	Failed	Alternate text that will never be read
<a href="#">Associated with content</a>	Failed	Alternate text must be associated with some content
<a href="#">Hides annotation</a>	Failed	Alternate text should not hide annotation
<a href="#">Other elements alternate text</a>	Failed	Other elements that require alternate text

## Tables

Rule Name	Status	Description
<a href="#">Rows</a>	Failed	TR must be a child of Table, THead, TBody, or TFoot
<a href="#">TH and TD</a>	Failed	TH and TD must be children of TR
<a href="#">Headers</a>	Failed	Tables should have headers
<a href="#">Regularity</a>	Failed	Tables must contain the same number of columns in each row and rows in each column
<a href="#">Summary</a>	Skipped	Tables must have a summary

## Lists

Rule Name	Status	Description
<a href="#">List items</a>	Failed	LI must be a child of L
<a href="#">Lbl and LBody</a>	Failed	Lbl and LBody must be children of LI

## Headings

Rule Name	Status	Description
<a href="#">Appropriate nesting</a>	Failed	Appropriate nesting

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# Converting docs to PDF

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If scanning documents, make sure they are not set up as images but are scanned or converted to fully OCR documents

# Step by Step Acrobat directions

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- Start with a clean copy of the document (free of markup or margin notes).
- When you scan, make sure to use book scanners for bound materials and fed/bed scanners for single/multiple pages.
- Set the scanner to a higher resolution/quality when possible.
- Export PDFs directly from programs like Microsoft Word. Check for and enable accessibility options in those platforms before exporting.

# Some Emerging AI/AT Tools

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DeepL “The world’s most accurate translator” <https://www.deepl.com/translator>

Google Translate <https://translate.google.com/>

Read/Write Gold <https://www.dyslexic.com/product/read-write-gold-windows-dsa-digital-download/>

Google Lens (see it and describe it – I wonder how this would work on field trips) <https://lens.google/>

Microsoft Seeing AI <https://www.microsoft.com/en-us/ai/seeing-ai>

Khanmingo <https://www.khanacademy.org/khan-labs>



# World-class AI for education

Say hello to Khanmigo, Khan Academy's AI-powered guide. Tutor for learners.  
Assistant for teachers.

[Get Khanmigo](#)

[Subscribe to newsletter](#)

# Additional Materials

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- [Creating Accessible Materials | Dartmouth Center for the Advancement of Learning](#)
- [Apple Accessibility Resources](#)
- [Microsoft 365 Blog Accessibility Resources](#)
- [Google Make your document or presentation more accessible](#)
- [National Instructional Materials Accessibility Standard \(NIMAS\)](#)
  - [Questions and Answers on the National Instructional Materials Accessibility Standard \(PDF\). \(ed.gov\)](#)
- [The Nora Project](#) – Information about inclusive classroom development
- [UDL: The UDL Guidelines \(cast.org\)](#) – overview of UDL Guidelines from CAST
- [The DAISY Consortium](#) – accessibility of digital talking books

# Contact Information

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*Education Doctoral Program*