



Digital Accessibility



WINONA

STATE UNIVERSITY


COLLEGE OF EDUCATION

Leadership Education Department

DIGLITCON 2023

STEVE BAULE

STEVEN.BAULE@WINONA.EDU



“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

- 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

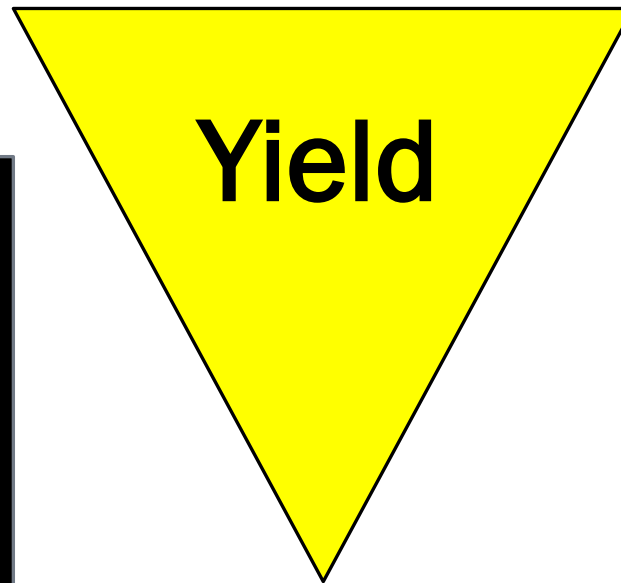
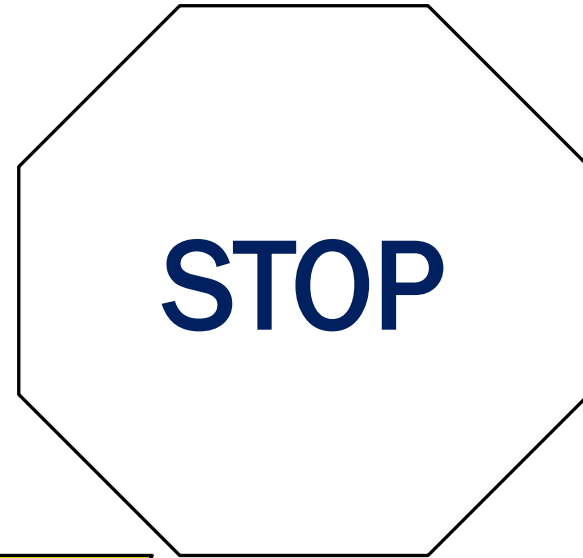
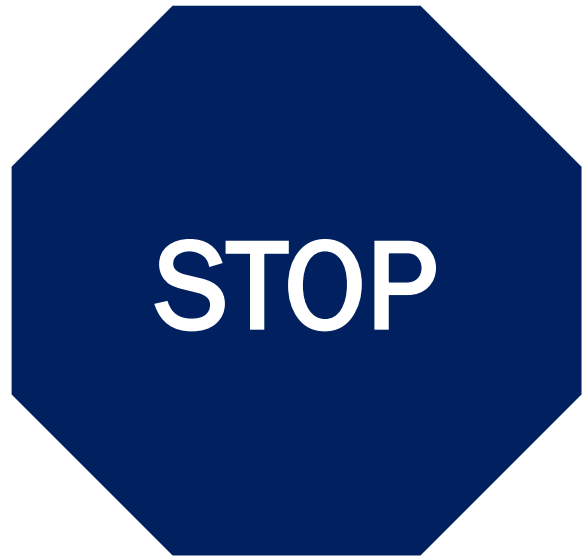
Color Contrasts

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

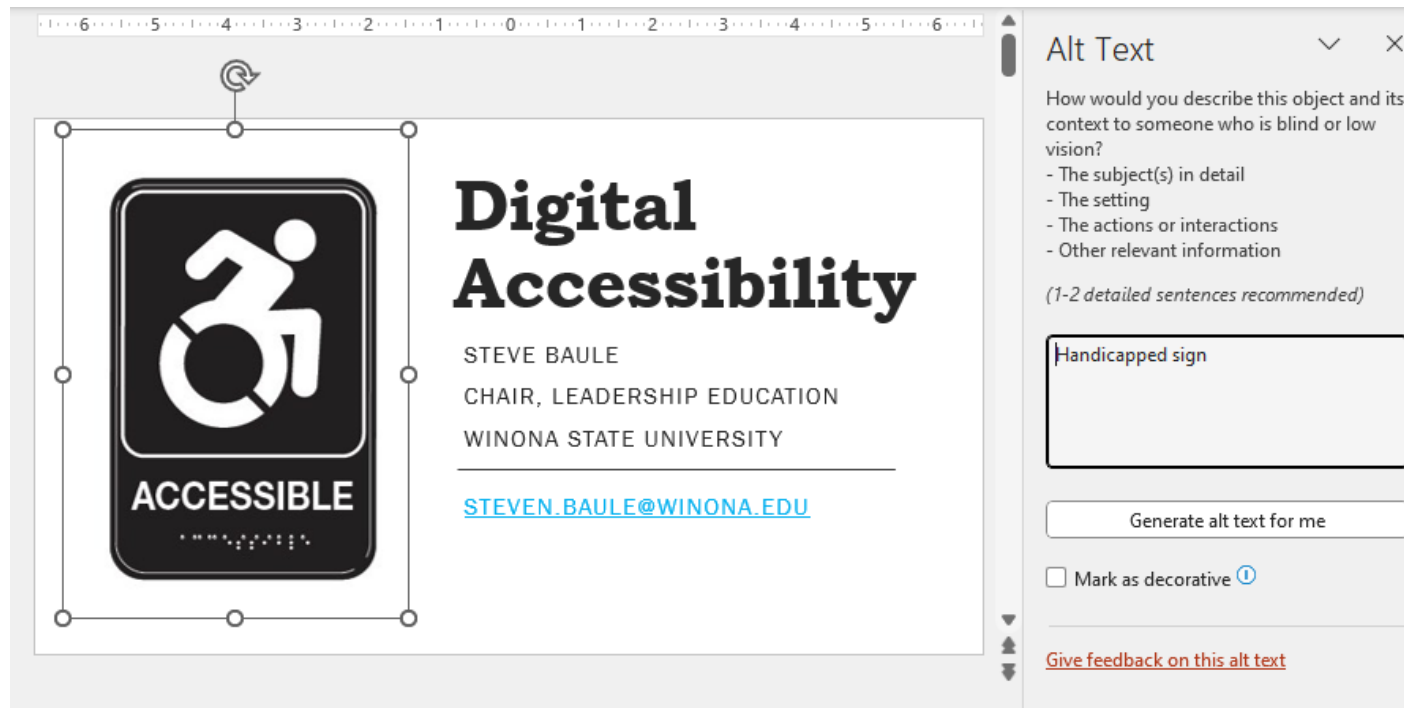
WCAG AA: **Pass**

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 black sign with a white wheelchair icon and the word "ACCESSIBLE" in white capital letters is shown. 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 hyperlink for his email, "STEVEN.BAULE@WINONA.EDU", is provided below a horizontal line. A ruler at the top of the interface shows a scale from -6 to 6. On the right side, a sidebar titled "Alt Text" is open, containing a dropdown arrow and a close button. The sidebar text asks, "How would you describe this object and its context to someone who is blind or low vision?" and lists four bullet points: "The subject(s) in detail", "The setting", "The actions or interactions", and "Other relevant information". A note below these points states "(1-2 detailed sentences recommended)". A text input field contains the text "Handicapped sign". Below the input field is a button labeled "Generate alt text for me". At the bottom of the sidebar, there is a checkbox labeled "Mark as decorative" with a help icon, and a link that says "Give feedback on this alt text".

Digital Accessibility

STEVE BAULE
CHAIR, LEADERSHIP EDUCATION
WINONA STATE UNIVERSITY

STEVEN.BAULE@WINONA.EDU

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”

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

- *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

- 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

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

Minimum Font Size

- 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

- 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

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

These include:

- Page numbers
- Headers and footers
- Headings

Tables

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 \(tamu.edu\)](#)



Google Accessibility

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 screenshot shows the Grackle Docs website. At the top left is the Grackle logo, a blue circle with a white grackle silhouette, followed by the text "grackle Docs". To the right is a blue button that says "Contact Us Today". Further right are 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 wrench and screwdriver, a document with a checkmark, and a photo icon. Below the banner are three columns of text, each with a corresponding button:

- Accessible Google Docs, Slides, and Sheets.**
[Click for more Grackle info](#)
- Accessibility auditing for your websites**
[Click for more Audit info](#)
- Complete document remediation services**
[Click for more Remediation info](#)

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.



Converting Google Docs

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.

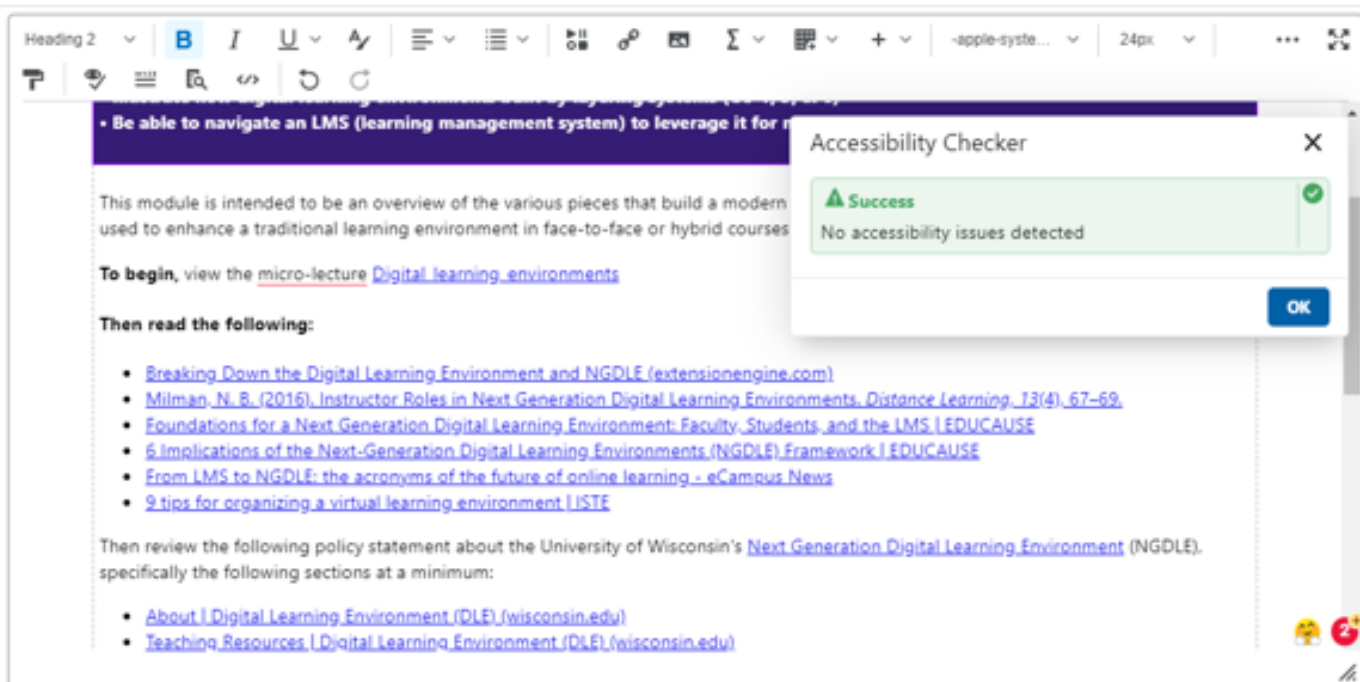
<https://uit.stanford.edu/accessibility/guides/google-docs>

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

Complete the following steps to run the Office Accessibility Checker:

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 in a presentation software. The slide content includes a heading, a paragraph, a link to a micro-lecture, a list of reading materials, and a policy statement. An 'Accessibility Checker' dialog box is overlaid on the slide, displaying a green success message: 'Success No accessibility issues detected'. The dialog box has an 'OK' button.

Heading 2 | B | I | U | A | [List Icon] | [Table Icon] | [Equation Icon] | [Text Icon] | + | -apple-system... | 24px | [More Icon]

• 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

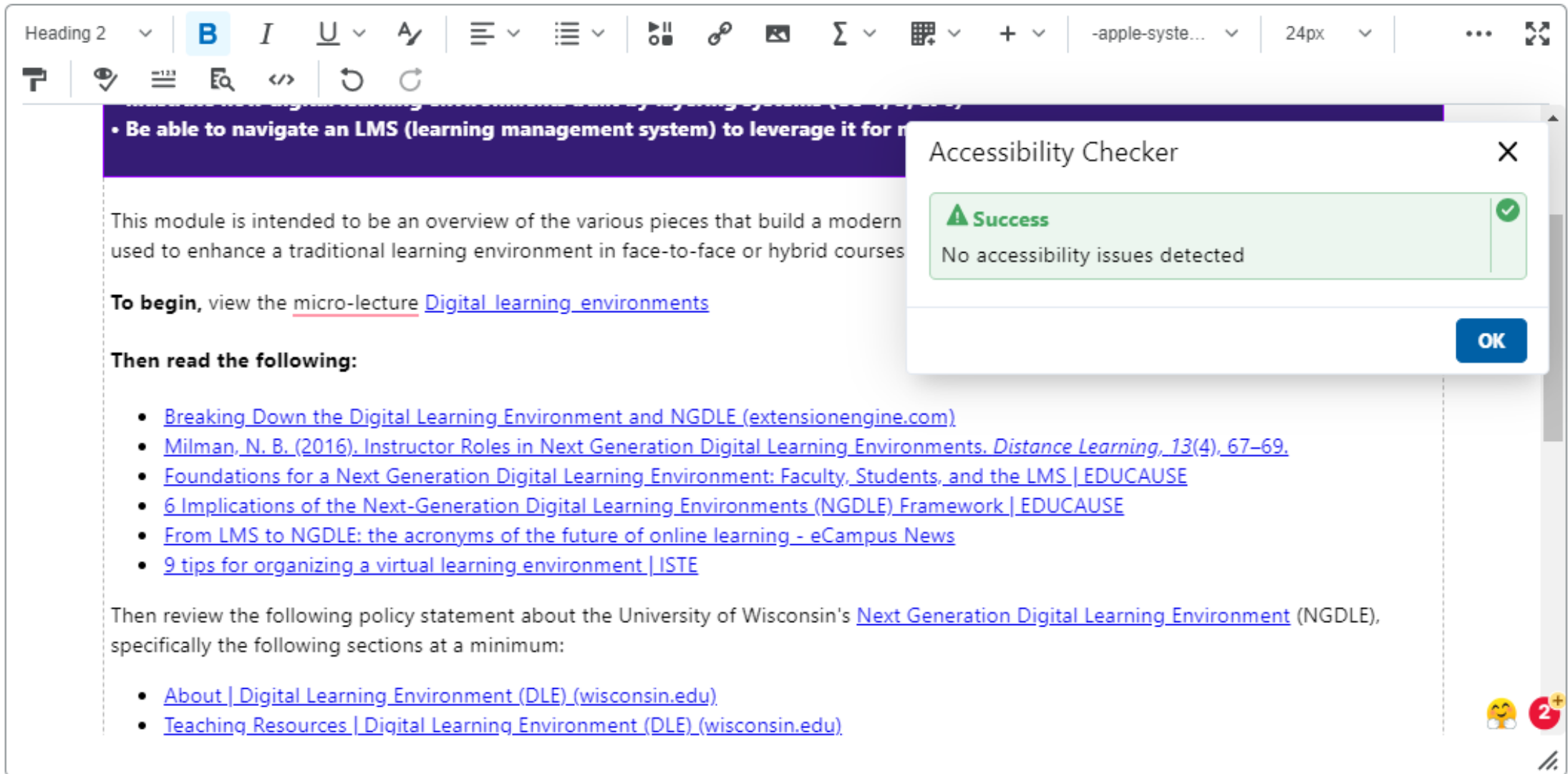
Additional Information

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 containing various formatting and editing tools. The main content area contains a heading, a paragraph, and a list of links. An 'Accessibility Checker' dialog box is overlaid on the right side of the page, displaying a green success message: 'Success No accessibility issues detected'. The dialog box has a close button (X) in the top right corner and an 'OK' button at the bottom right. In the bottom right corner of the page, there is a smiley face emoji and a red circle with the number '2+'.

Heading 2 **B** *I* U ~~A~~ | | | | | | | | | -apple-syste... | 24px | ...

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

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 | 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 \(DLE\) \(wisconsin.edu\)](#)

Accessibility Checker

Success No accessibility issues detected

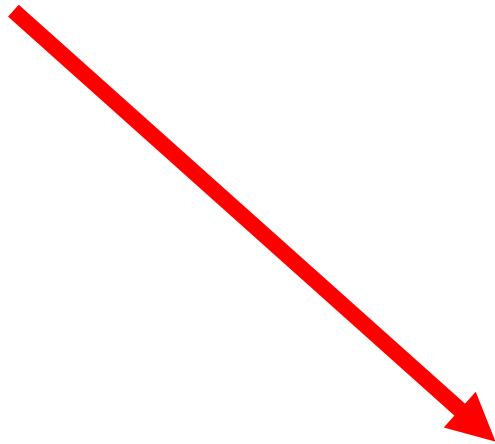
OK

😊 2+

CANVAS

The image shows a screenshot of the Canvas LMS editor interface. At the top, there is a breadcrumb trail: > Pages > Example Course Page. Below this, there is a text input field containing the text "Example Course Page". To the right of the input field, there is a link labeled "HTML Editor" with a small icon to its left. A red arrow points down from the "HTML Editor" link to a button labeled "Check Accessibility". The button is located at the bottom right of the editor toolbar, which contains various icons for text formatting (bold, italic, underline, text color, background color, link, unlink, list, indent, outdent, link, unlink, link, unlink, link, unlink), alignment (left, center, right, justified), font size (12pt), paragraph style (Paragraph), and a person icon representing accessibility. The "Check Accessibility" button is a black rectangle with white text, and a vertical grey line extends downwards from the person icon to the button.

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.

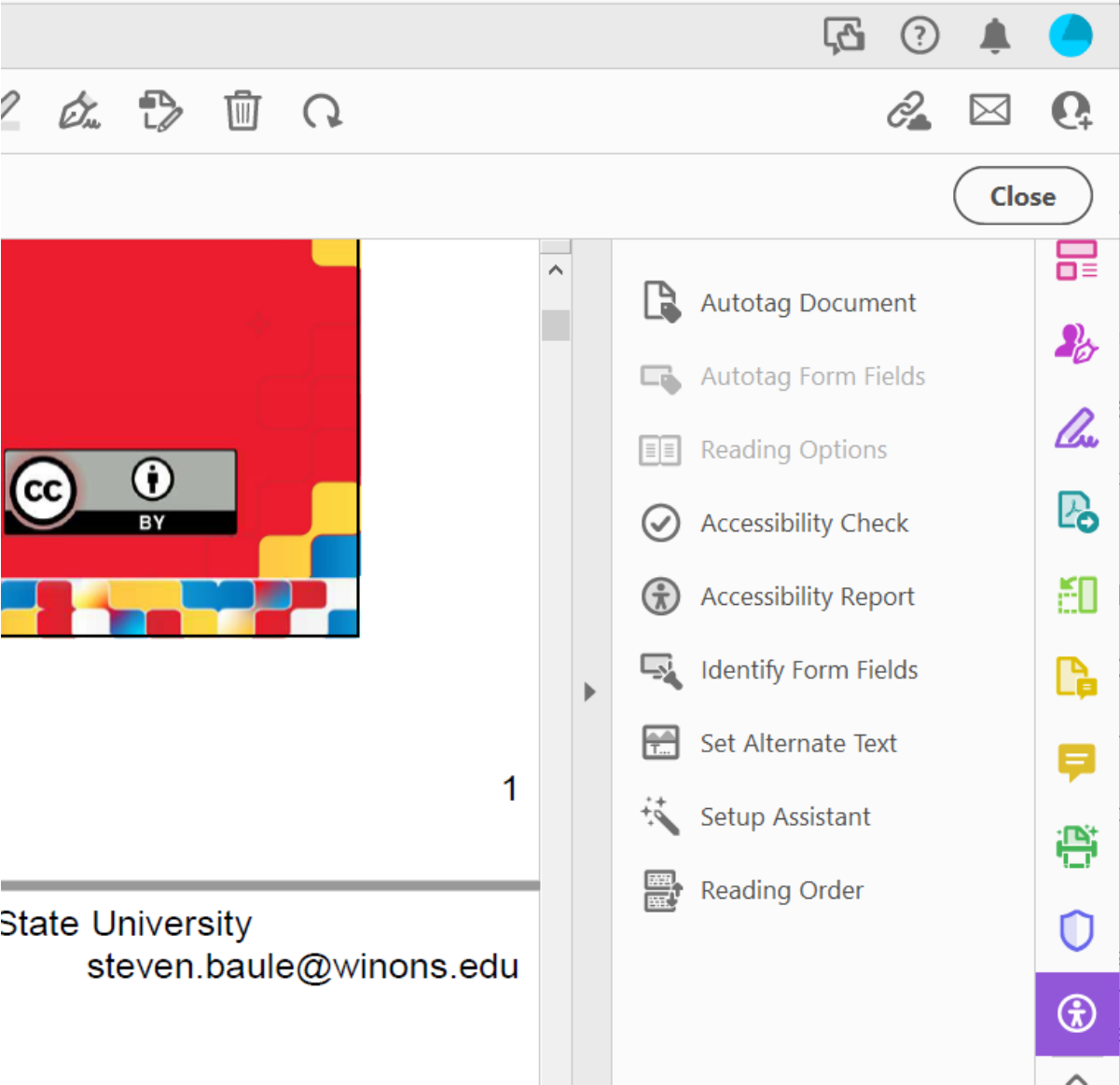
[Request e-signatures](#)

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 colorful border. A license icon (CC BY) is visible in the bottom left corner of the document. To the right of the document is a vertical menu 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, there is a footer with the text:

State University
steven.baule@winons.edu

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

Page Content

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

Forms

Rule Name	Status	Description
Tagged form fields	Passed	All form fields are tagged
Field descriptions	Passed	All form fields have description

Alternate Text

Rule Name	Status	Description
Figures alternate text	Failed	Figures require alternate text
Nested alternate text	Failed	Alternate text that will never be read
Associated with content	Failed	Alternate text must be associated with some content
Hides annotation	Failed	Alternate text should not hide annotation
Other elements alternate text	Failed	Other elements that require alternate text

Tables

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

Lists

Rule Name	Status	Description
List items	Failed	LI must be a child of L
Lbl and LBody	Failed	Lbl and LBody must be children of LI

Headings

Rule Name	Status	Description
Appropriate nesting	Failed	Appropriate nesting

Converting docs to PDF

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

- 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

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

- [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

Steve Baule

Winona State University

Twitter: @Baule_S

E-mail: steven.baule@winona.edu

Phone: 507-285-7481



WINONA STATE UNIVERSITY
COLLEGE OF EDUCATION
Education Doctoral Program