UNSW Business School

Digital Accessibility Guides for Learning

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1. Forward and Background

Learning and teaching are increasingly reliant upon digital learning resources, and this reliance has been deepened by the Covid-19 pandemic. The shift to virtual learning provides opportunities to create a more equitable and inclusive learning environment.

Digital accessibility is the inclusive practice of ensuring no barriers that prevent interaction with, or access to, websites and digital learning materials by everyone. Many students use screen readers or voice recognition software or keyboard-only to access learning resources due to visual impairment, hearing impairment, mobility disability, neurodiversity, or colour blindness. Learning resources must be accessible and meet the different ability needs of students.

UNSW Business School provides [Classroom Inclusivity Guidelines](). The Guidelines include four sections: 1) Work with Diverse Content, 2) Enable Accessibility, 3) Use Inclusive Language and 4) Promote Social Justice. The Digital Accessibility Guide for Learning (referred to in this document as "Guide") extends the aforementioned Guidelines to enhance accessibility in online and blended learning environments. By providing accessible materials, instructors help create an inclusive and welcoming digital environment for every student, as well as eliminate barriers to student success.

About 11% of students need inclusive learning support [(ABS)](), but many of them do not disclose their disability status. Reasons not to disclose include not wanting the label of "special treatment," rejecting the label of disability, experiencing discrimination, being shamed for having a disability, etc.

The Disability Discrimination Act of 1992 and Disability Standards for Education 2005 mandate that institutions ensure that individuals with disabilities have the same access to information and services as students without disability. Specifically, the websites and digital materials of Australian education entities need to at least meet Web Content Accessibility Guidelines (WCAG) 2.0 Level AA standards. The WCAG 2.0 outlines a range of recommendations and guidelines to ensure that digital spaces and materials are equitable and more user-friendly in general. WCAG 2.0 AA standards are the minimum legal requirement in Australia.

This document provides tips for creating a more accessible digital learning environment. We start with common accessibility issues and how they influence student learning. Next, we introduce different tools and methods to identify inaccessible components in learning materials stored in Moodle (Section 3), Word (Section 4), PowerPoint slides (Section 5), and PDFs (Section 6). Finally, we offer a step-by-step guide on how to make your learning materials more accessible.

2. Common Accessibility Issues and How they Influence Learning

2.1 Captions and Transcripts

- Per WCAG 2.0, the best practice is to have captions (or subtitles) available for videos, as well as a transcription document posted below the video or available for download. Thus, students have different options to access a video's contents.

- Live captions are important for deaf and hard of hearing (HOH) students, neurodiverse students, and students facing language barriers.

- If you are presenting PowerPoint slides, you can turn on live captions (see Section 5.2).

- For in-person classes in which you are not presenting via PowerPoint, you can share your documents on screen through Teams and turn on live captions within this application.

- For synchronous online classes, the option to turn on live captions is available in both Zoom and Teams.

- Please try out the live captions function beforehand on the computer you plan to use for teaching. The live captions function may require additional system resources and may slow down your presentation or Zoom speed.

- Class Collaborate (formerly Blackboard Collaborate) does not have a live captions function. It needs a captioner to type what is being said during a session. Equitable Learning Services can organise an external captioner.

- Lecture Recordings+ (Echo360) does not have a live captions function. It automatically creates an interactive transcript and captions only **after** the recording is generated.

- To ensure there are captions in Moodle videos, please see Section 3.2.

- You can upload recorded videos to Microsoft Stream. Microsoft Stream can auto-generate captions.

- Automatically generated captions (such as those generated in Zoom, Teams, Microsoft Stream, PowerPoint, and Echo360) are 85–90% accurate. As such, they do not meet the needs of deaf and hard of hearing users. These users require captions that are 99–100% accurate. For these users, Equitable Learning Services can organise an external supplier (e.g. AiMedia) to provide access to live caption service with high accuracy. Students need to register via ELS to access such caption service.

2.2 Fonts

All caps fonts can cause confusion for students with dyslexia and speech synthesizer in screen readers. For example, "It is pizza" in all caps would read "IT IS PIZZA." A speech synthesizer will interpret IT as the acronym of Information Technology. Speech synthesizers are used by blind and low vision students, as well as neurodiverse students (e.g., students with dyslexia), to read out the texts on the screen.

2.3 Alternative Texts for Images and Graphs

When using images, make sure you provide [alternative text](#) (also called alt text). Alternative text can help students using screen readers to understand images and graphs. Screenshots should also have alt text. When adding alt text, be specific, succinct and describe what the student should know. Mark the image as decorative if it does not contain necessary information.

2.4 Descriptive Texts for Links

Descriptive links can help students using screen readers to understand the purpose of the links.

- Change the whole URL link into a named link. For example, if you want to give students the link https://www.student.unsw.edu.au/special-consideration, change it to [UNSW special consideration.](#)
- Manually check that hyperlinks have meaningful descriptions or contextualising information. For example, "click here" should be described as "assessment information."

2.5 Text Formatting

Appropriate text formatting can help students with reading difficulties (e.g., students with dyslexia or low vision).

   a. Use sans serif fonts, such as "Arial" or "Calibri".
   b. 12-point font or larger is recommended.
   c. Avoid using justified text (that gives your text straight edges on both sides of the paragraph), since extra spaces can make it difficult to read.

2.6 Headings

A good heading structure creates logical and effective navigation. Many students rely on heading structure to navigate pages using screen readers, keyboard-only navigation, or voice control software.

Here are some examples of common heading issues:

1. Skipping heading levels in webpages (e.g., no <h2> between <h1> and <h3>; having the same names for different levels of headings).
2. Duplicated headings in Word outlines.
3. Missing slide titles or having duplicated titles in slides.

2.7 Reading Order

It is important to check that all items and objects are in a logical reading order.

Blind students and others who use screen readers will hear the contents read back in a specific order. Ideally, the screen reader will read the contents in a manner that is logical and sequential. A Z-Pattern design (left to right, top to bottom) is a good practice that follows the route by which most people read. Non-logical reading orders lead to confusion for students using screen readers.

2.8 Table Formatting

A good table allows students to navigate the table contents from cell to cell while hearing the screen reader announce the corresponding table headers and cell contents. Table headers should have visible text that describes the purpose of the row or column to both sighted users and screen reader users. Some common issues that make tables less screen reader-accessible include missing table headers, merged cells and split cells. If tables are not marked up properly, it causes difficulty for screen readers to read out.

2.9 Colour Contrast

There should be sufficient colour contrast between text and/or meaningful graphics and background colours. Colour contrast makes visual material more accessible to low vision and colour-blind students. A colour contrast ratio of 4.5:1 is required for standard text content; 3:1 is required for large text or non-text graphical controls. Large text is defined as 14 point and bold (typically 18.66px) or larger, or 18 point (typically 24px) or larger. Colour Contrast Analyser (CCA) software can be downloaded for free. Here is the user explanation video.

2.10 Spacing

The spacing between paragraphs in Word or PowerPoint slides results in empty tags after converting them to PDFs. Empty tags disrupt the functions of screen readers and voice control software. Avoid using [multiple presses of] the "enter" or "return" key to insert line spaces. Rather, please delete empty lines; instead, you can adjust the spacing by using the "Spacing" functions in the "Paragraph" section under "Home" ribbon.

3. Accessibility in Moodle

3.1 Checking Steps in Moodle

The embedded Accessibility Report is a good start for checking course accessibility. It gives an overview of a course's accessibility performance and checks both website and document issues.

Comprehensively checking Moodle accessibility issues involves large amounts of work and can be complicated. The following steps are some common issues that you can fix by yourselves. You can reach out to Business School EDI by emailing <BUSEDI@unsw.edu.au> for further advice if you want a comprehensive check for your Moodle course pages.

Step 1: Go to the left panel of the course on Moodle, select "Accessibility Report."

Step 2: Once opened, the Accessibility Report shows the overall accessibility score of your course. On the left, it lists the types and numbers of issues.

You can fix the accessibility issues by selecting any of sections labelled "Content with the easiest issues to fix," "Fix low scoring content" and "Remaining issues."

The Moodle Accessibility Report has many limitations. It shows the issue but does not indicate the location of the issue nor the location of problematic images or documents.
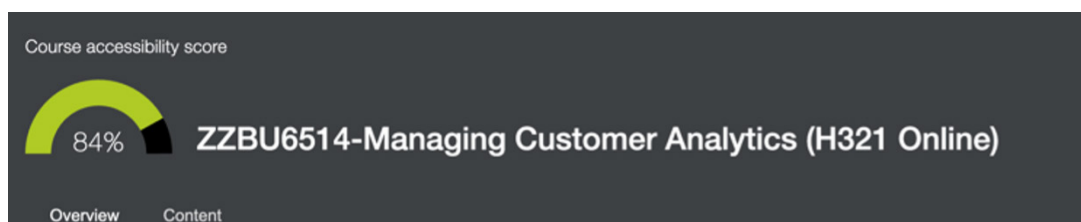
Step 3: Select a specific issue to check the details and fix it. The right describes what the issue is. Follow the instructions to fix each issue accordingly.
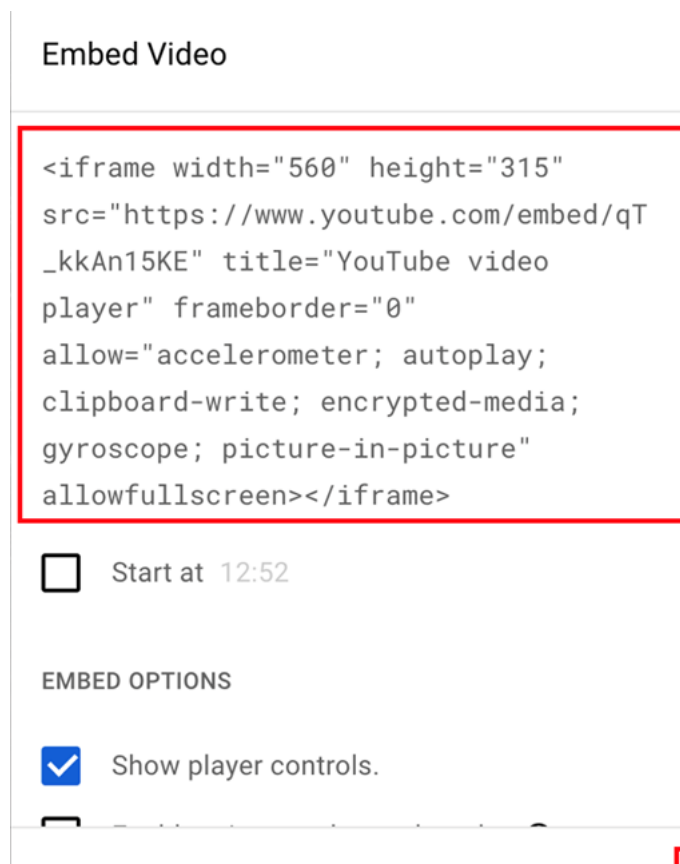
3.2 How to Fix Missing Video Captions

If you copy and paste YouTube links into a Moodle text box, the YouTube video will not have a play control bar with CC (closed captions) option. To solve this, follow these steps:
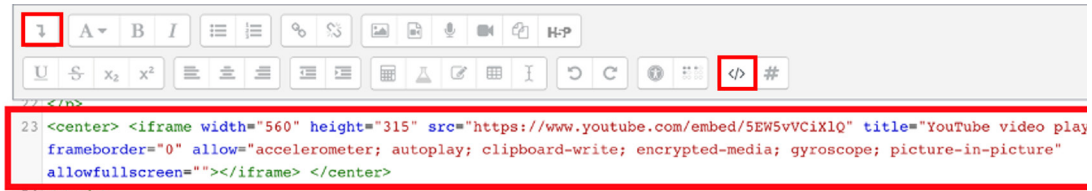
Step 1: Go to the YouTube video. Click "Share" and choose "Embed <>"
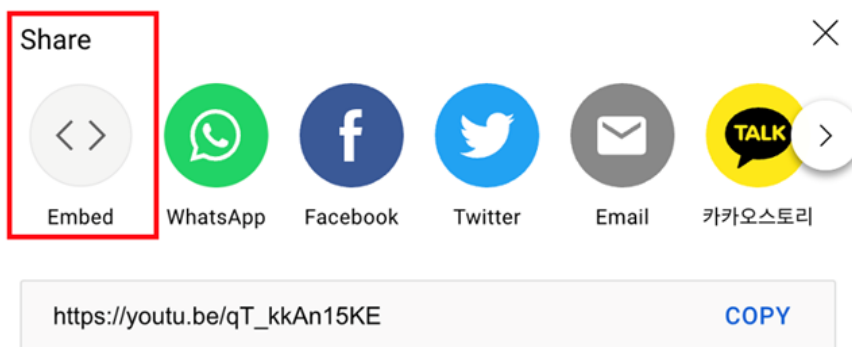
Step 2: Copy the paragraph of embed code starting with "<iframe."

Step 3: Back in Moodle, turn editing on, open the HTML code box where the icon is "</>." Copy and paste the paragraph of embeddable code starting with "<iframe" to the place that you want it.

Step 4: If you want to add a break before or after the video, add a line "<br>" before the paragraph of embed code. If you want to put the video in the centre of the page, add a code <center> before "<iframe" and </center> at the end of the video </iframe> code.

Example HTML code for YouTube embed videos:

You can copy and paste the below example HTML code to Moodle and change the video URL accordingly.

<iframe width="560" height="315" src="Insert the URL of the video you want to embed here" title="YouTube video player" frameborder="0" allow="accelerometer; autoplay; clipboard-write; encrypted-media; gyroscope; picture-in-picture" allowfullscreen=" " ></iframe>

UNSW Teaching also has a [guide on how to "Embed a Video in Moodle".](#)

3.3 How to Fix Missing Frame Titles

If the imported video is missing a frame title, go to the Moodle, turn editing on, open the HTML code box where the icon is "</>." Add "title= …" into the "<iframe> … </iframe>" code line.
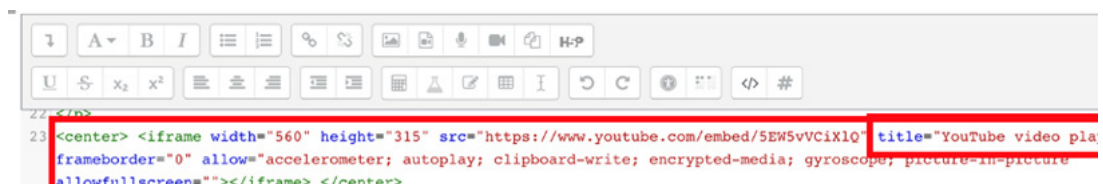
4. Accessibility in Word

4.1 Checking Steps in Word

Step 1: Check original documents in Word by running "Check Accessibility" in the Review ribbon. Or type "Check Accessibility" in the search bar.
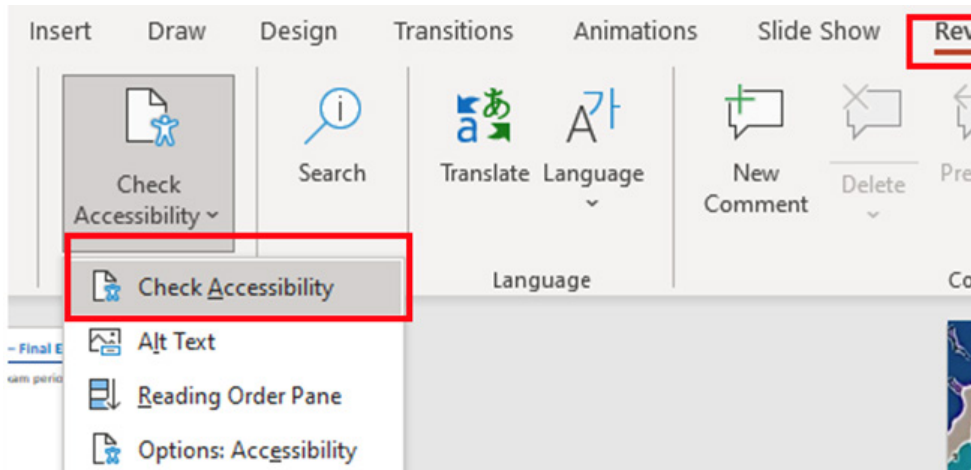
Step 2: Fix the issues by following Microsoft's tips.

Step 3: Check and adjust the reading order.

Step 4: Manually check the hyperlinks to ensure that they have meaningful descriptions or contextualisation.

4.2 How to Set Heading Levels in Word

The heading levels create logical and effective navigation for students using screen readers, keyboard-only navigation, or voice control software. Heading levels are very useful for navigating long Word documents, such as Assessment Brief over 10 pages.

Step 1: Go to "View."

Step 2: Select "Outline."

Step 3: Select the left/right arrows to adjust the heading levels and body texts.
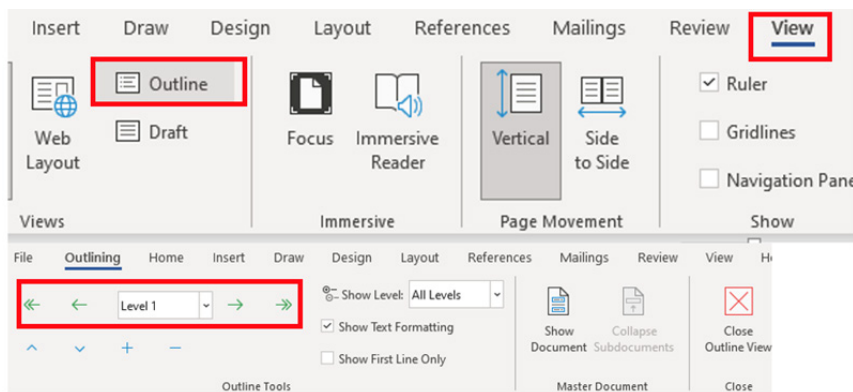
## 4.3 How to Adjust the Reading Order in Word

Step 1: Go to "Review."

Step 2: Select "Check Accessibility."

Step 3: Select "Navigation Pane."

Step 4: Select Headings on the Navigation pane. This will show the reading order of each heading style tagged in the document.

Step 5: Drag the Headings to adjust the orders (see below for details of how to set heading levels in Word).

Step 6: make sure that you place images, data tables, charts, and other objects "inline" with the document content (rather than "floating"). This ensures that the alt text for each of these images will be read by screen readers at the appropriate point on the page. Check here for more details on how to make objects "inline".
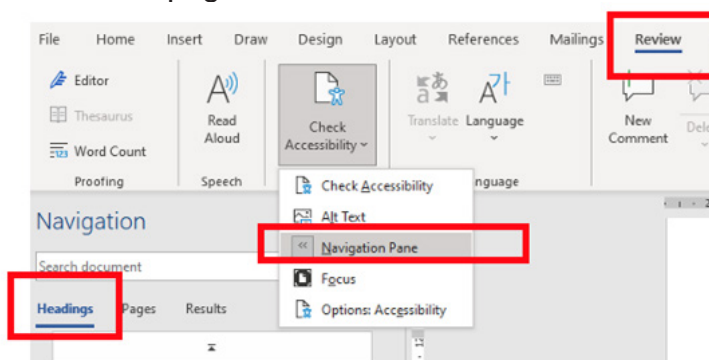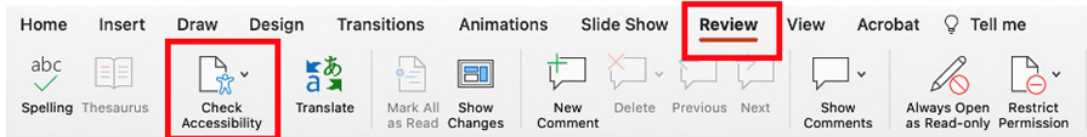
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5. Accessibility in PowerPoint Slides

5.1 Checking steps in PowerPoint Slides

Step 1: Go to "Review" ribbon and select "Check Accessibility," or type "Accessibility checker" in the search bar.


Step 2: A bar with errors, warning, tips and intelligence services will appear on the right side; when you click on them, they will direct you to each issue to solve. If you click on a specific issue, "Why Fix?" and "Steps to Fix" will appear under the inspection results.

5.2 How to Add Captions for Audio and Video for PowerPoint Presentation:

Step 1: Find the "subtitle settings" under the "Slide Show" section of the PowerPoint ribbon, or enter "subtitles" into the search bar to find the button.

Step 2: Please select "Always Use Subtitles".
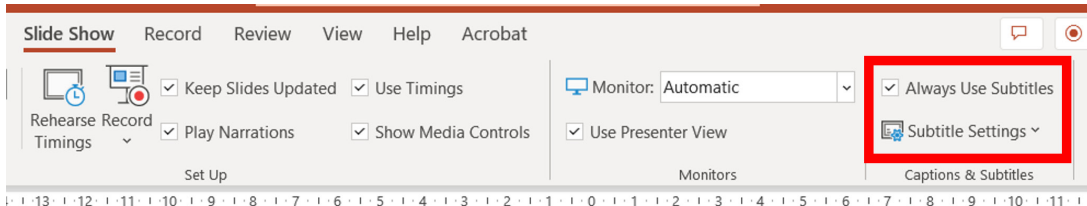
When adding YouTube clips, captions are automatic included in PowerPoint.

5.3 How to Fix Duplicate Slide Headings

Some slides are named the same title, which causes confusion.

To solve this issue, put (1) and (2) after slides with the same title name.

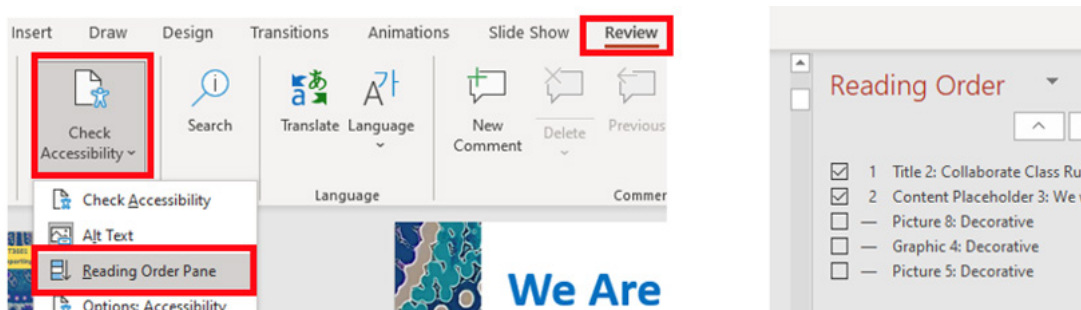## 5.4 How to Adjust Reading Order in Slides (Windows)

Step 1: Go to "Review."

Step 2: Select "Check Accessibility."

Step 3: Select "Reading Order Pane."

Step 4: Tick the elements that you'd like to show.

Step 5: Drag the elements to adjust the order.

Step 6: Untick the elements which are not necessary to read (i.e., decorative images).

5.5 How to Adjust Reading Order in Slides (Mac)

Step 1: Go to "Accessibility."

Step 2: Select "Selection Pane"; the order will be shown on the right.

Step 3: Manually drag each object to adjust the order.

Step 4: Click "OK."

5.6 How to Check and Fix Colour Contrast Issues

Colour contrast issues must be checked manually and sometimes appear even if using PowerPoint built-in features. For example, some default colours of the "SmartArt" are not aligned the WCAG standard.

Solution:

- Check colour contrast with Colour Contrast Analyser (CCA).
- Change the colours of elements where being detected as fail in CCA.

5.7 Animation of progressive revelation

Animation within slides can disrupt screen reader reading out all the texts. Thus, we suggest the slides shared to students should remove all animations.

Solution 1: convert PPT will remove animation automatically

Solution 2: remove animations from all slides.

Steps:

- Select "Slide Show"
- Select "Set up slide show"
- Under "Show options", tick "Show without animation"

5.8 How to export an accessible PDF

- Go to "File"
- Select "Export"- "Create Adobe PDF"
- In the pop-up saving window, select "Options"
- In the Acrobat PDF Maker window, select "Enable Accessibility and Reflow with tagged Adobe PDF"
- Click Ok and save

6. Accessibility in PDF

When designing the course or collecting course materials, avoid a scanned PDF. Scanned PDFs are images and cannot be read out by screen readers or navigated by keyboard or voice control software.

If you have to use scanned PDFs, please convert them into screen reader compatible (OCR) PDFs. [Adobe provides you a way to convert PDFs to](#) [editable text files.](#)

6.1 Checking Steps in PDFs

Ensure you have fixed all the accessibility issues in the Word or PowerPoint documents before converting to PDF.

Step 1: Running "Accessibility Check" in Adobe Acrobat Pro.

- Go to "Tools."
- Add "Accessibility" function.
- Then go to the file you are going to check, on the right pane, select "Accessibility" icon, and run "Accessibility Check."

Step 2: If you click on or search for "accessibility report," it will showcase hyperlinks for each issue and tell you how to solve them. Check this [link, "Create and verify PDF accessibility," to get more information.](#)

Step 3: Go to the left pane of the "Accessibility Checker" to see issues. Clicking on an issue will navigate you to the specific location of that issue. Some of them can be fixed directly on the PDF; some of them need to be fixed within the original document format, such as if the PDF is converted from Word or PowerPoint documents.

Step 4: Check for logical reading order and colour contrast manually. These issues are not detected by PDF Accessibility Checker. For tag errors, you can auto tag the document to save time before fixing the additional tag issues.
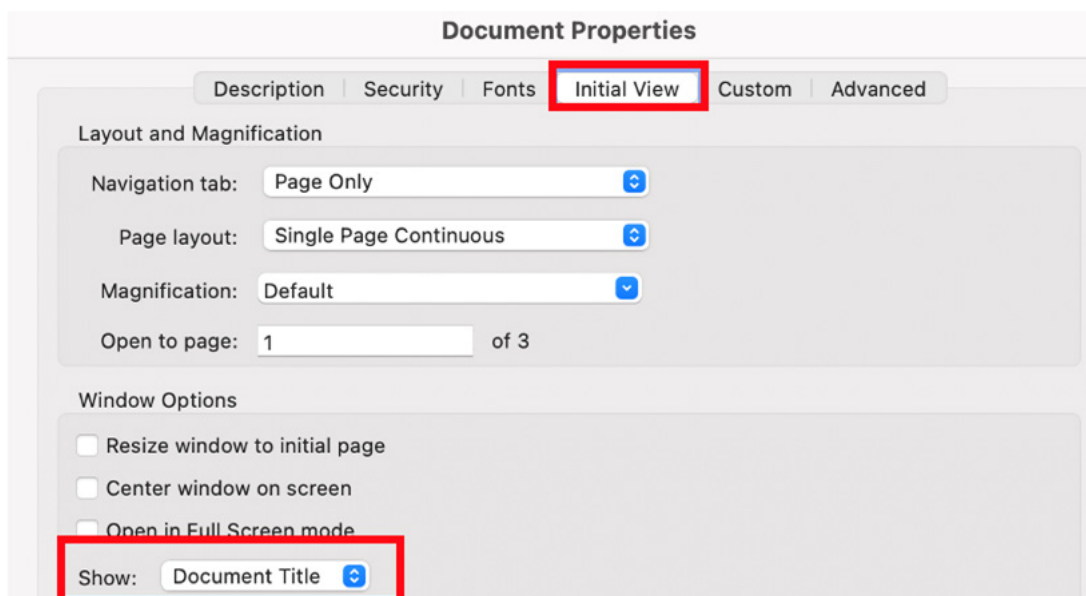
6.2 PDF Document Title Needed

Step 1: You need to add a PDF Document Title.

- Go to "File": Set a descriptive title under "Description." Be sure to do this for the document title, not the file title.
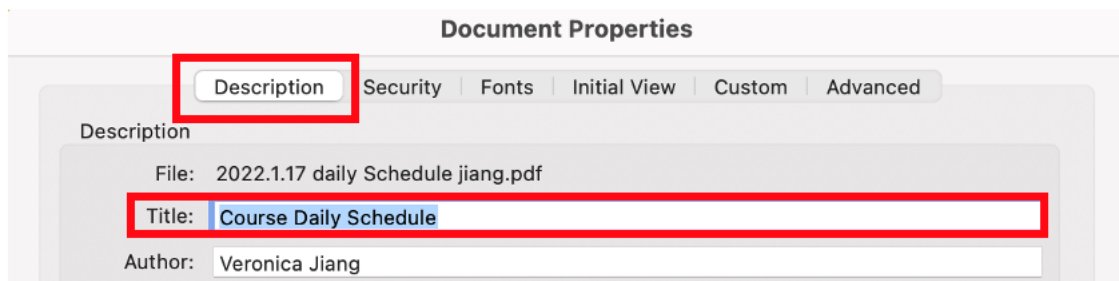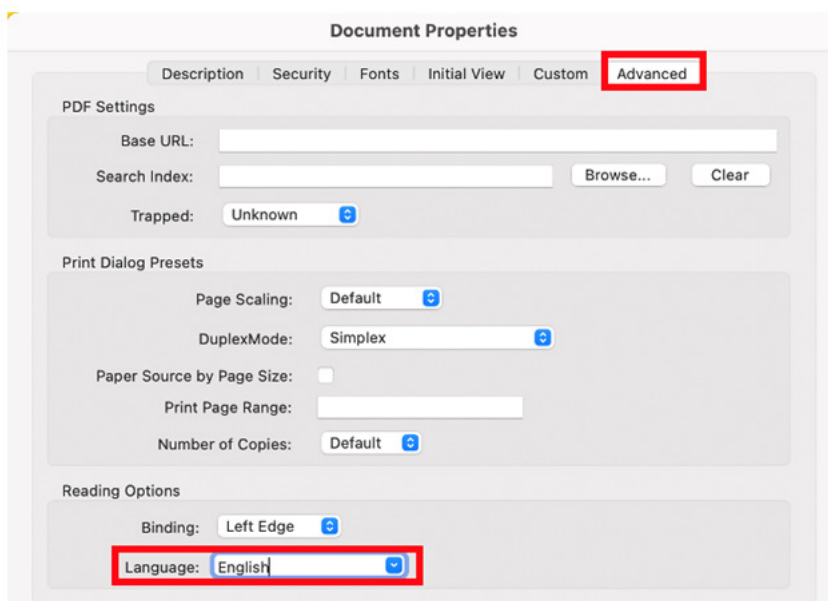

Step 2: Go to "File" and then to "Document Properties"; under "Initial View" set to show Document Title not File Name.

6.3 PDF Language Setting

Language should be set properly. Go to "File," then to "Document Properties"; under "Advanced," scroll to "Reading Options" and ensure that the primary language is configured in the Language field.

6.4 PDF Reading Order

Remember that reading order should be logical. Headings should follow the following structure: Heading 1, Heading 2, Heading 3. A common error is inappropriate nesting. For example, Heading 2 should follow Heading 1. If Heading 3 follows Heading 1, this is an inappropriate nesting error.

With the Reading Order tool open, mark the element you want to tag and select the tag name from the tool.

- Click on the box number.
- Allocate a type to it (e.g., H1).

6.5 Accessibility Issues After Word or PowerPoint is Converted to PDF

There are some additional accessibility issues in PDF documents when you convert accessible Word or PowerPoint documents to PDF documents.

1. Check the PDF reading order; see Section 6.4 above.
2. Add alternative text for any special visual elements in the Word or PowerPoint document.

1) Shape elements need alt texts. Reason: PPT slide shape elements become images in PDF. This issue needs to be fixed on Word or PowerPoint. If a figure or text box is inside a shape element, the figure alt text cannot be read in PDF. How to fix: delete the shape element or add Figure alt text in PDF. See slide shape element example below.ds

2) Smart Art elements and Nest Elements of the Smart Art need alt texts.

Reason: Smart Art group does not have alt text, and nest elements become individual images in PDF and need alt text. See example below.
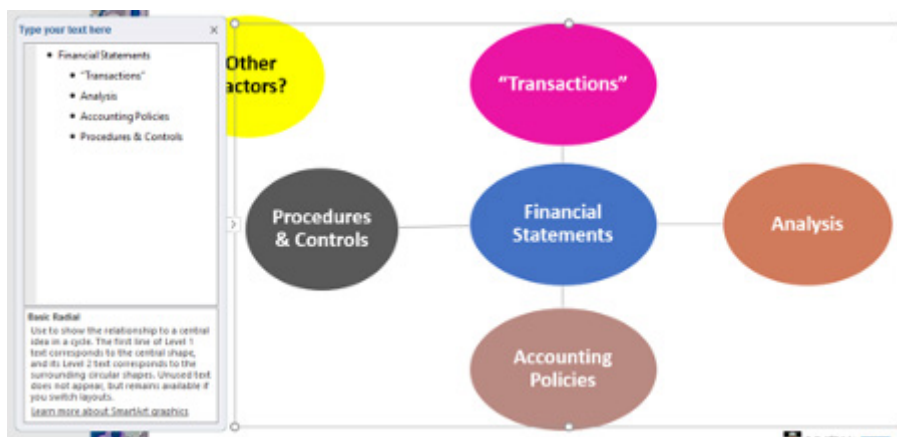
3) Nest Elements of the group image need alt texts. Reason: group image can have one alt text in PPT, but nest elements become individual images in PDF. Thus, each nest element of the group image need alt texts. See group elements example below.

7. Contact

Any questions or comments can be directed to BUSEDI@unsw.edu.au

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