Accessible Content for Individuals who are Blind or Visually Impaired

Carmen Willings
Teacher of Students with Visual Impairments
& Founder & Developer of
www.teachingvisuallyimpaired.com

Today's Objectives

Create accessible materials
Create accessible documents
Create accessible slides
Make presentations accessible
Create accessible websites

Role of the TVI

Birth to 22-year-old students with visual impairments
All areas of the ECC.
Support Classroom Teachers
Support Therapists

Why Accessibility is Important

Universal design helps everyone
Low vision users
Users using screen readers
Peers & colleagues
Legal requirement (IDEA, ADA)
Durability and quality of materials

Considerations

Accessible to everyone
Current & future learners needs
Concrete objects & materials
Low vision learners
Braille learners
Screen readers

Accessible Content for Individuals who are Blind or Visually Impaired • large print outline
Auditory learners

Vision Simulators

View textbooks, magazines, instructional materials
PowerPoint from back of room
Apps to simulate visual impairment
[VisionSim](#) by Braille Institute
[Thru My Eyes Simulator](#) by Zooma
[I have low vision VR](#) by Retinosis Gipuzkoa

Printed Materials in Class

Textbooks and Novels
Worksheets: teacher made and professional publications
Magazines and Newspapers
Menus
Calendars
Forms
Instructional materials (flashcards, manipulatives, etc.)

Create Accessible Teacher Made Materials

Creating accessible materials and selecting pre-made materials that are accessible

Avoid Handwritten Materials

Can be difficult to read
Can alter legibility of materials
Create high quality materials
Especially critical if visual impairment
Even if student has no vision, need legibility for peers

Communication & Schedule Cards

Use high contrast
Typed simple font
Print and braille
Spaced apart to reduce clutter
APH Tactile Connection cards

Accessible Content for Individuals who are Blind or Visually Impaired • large print outline

Selecting Pictures

Literacy Activities
Simple pictures
Identifiable features
Simple font
High contrast
No visual clutter
Well-spaced

Accessible Functional Print
Functional literacy books
Large print and braille
Simple font
Simple line drawing
Velcro strip for response

Create & Select Accessible Documents
Creating accessible materials and selecting pre-made materials that are accessible

Readability of Fonts
Fonts make or break accessibility
Decorative fonts reduce the readability
Use Sans Serif Fonts
Avoid "fun" fonts (serifs, cursive or embellished fonts)

Selecting Fonts
Limit the number of fonts used
Recommended fonts that are widely available: Veranda
     Tahoma
     APHont
     Arial

Changing Fonts in Documents
Same font throughout document

Accessible Content for Individuals who are Blind or Visually Impaired • large print outline
In completed doc, CTRL+A to select all
Apply font in styles
Arial and Veranda most universal

Font Size
Use a minimum of 11pt to 12pt font
Large print minimum of 16pt
TVI should specify size of large print needed
Use a typometer

Avoid All Caps
Use underscoring, quotes, or bold
More difficult to read than lower and mixed case text.
Use sentence or mixed case
Avoid text with shadows
Avoid excessive underline and italics

Aligning Text
Avoid right alignment
Left align helps reader using magnification locate next line
Easier to find next block of information
Avoid fully justified text – changes spaces between letters & words
Avoid breaking words between lines

Color Contrast
Contrast between foreground & background
Print more legible
Easier to locate materials
Light on dark or dark on light

How to Select Fonts & Styles

Adequate White Space
Adjust space between lines and paragraphs
Adjust space around headers

Accessible Content for Individuals who are Blind or Visually Impaired • large print outline
Improves reading experience for all
Prevents clutter
Makes relationship between content more apparent

How to Adjust Spacing

Plain Backgrounds for Text or Workspace
Avoid complex or graphic backgrounds
Avoid blue and grey backgrounds (studies show fatigue the eye)
Place materials on solid tray to define space
Easier to read and locate materials

Use Built-In Tools
Styles of headings
Lists, Columns, Tables, Charts, Images
Designed to be accessible
Don't simulate charts & tables using shapes, etc.

Headings & Titles
Use built in styles
Levels help screen readers scan the text
Give user indication of where they are in document
Headings larger than the text
Necessary if Creating a Table of Contents

How to Create Headings

Alt Text Guidelines
Brief description. Not too wordy.
If the object is an image of text, it must match the text verbatim
If object is a decorative, use a space or " " as the alt text or check the "mark as decorative" box
Screen reader will then ignore.

Alt Text Basics
How should images be described?

Accessible Content for Individuals who are Blind or Visually Impaired • large print outline

[The Diagram Center](#)
[Microsoft: improve accessibility with alt text](#)
[WebAim Alt Text Guidelines](#)
Context is Key
Consider target audience
Be concise – more is NOT better
Tone & language

How to Add Alt Text

Don't Convey Meaning with Color Alone
Add text to explain color
Add texture or pattern instead of or in addition to color
This could be an asterisk or letter indicator in parenthesis but be sure to add a note that explains the marking

Color Deficient Example
[ColorDeBlind](#) app
Currently $.99 in app store
Simulates color blindness
Helps classroom teacher understand student's vision and need for alternatives to color.

How to Create Texture in Charts

Pictures & Objects In Line
Text wrapping embeds picture in text.
Screen reader can't read wrapped text.
Screen readers can only read pictures and objects if they are in line with text.

Using Lists
Standard bullets and numbers
Align left (not centered, right or justified)
Line spacing options
Horizontal text direction

Accessible Content for Individuals who are Blind or Visually Impaired • large print outline

Avoid Unneeded Columns

Difficult for people with low vision
Bulleted lists OK if:
Side by side
Second column in different background
No more than 6 bulleted lines

Column Use

Layout tab
Don't use table to simulate columns
Can adjust but – ensure enough white space
Customize Columns
Number of columns
Spacing adjustments

How to Create & Adjust Columns

Accessible Tables

Design tab: table styles options
Choose header row
Horizontal and vertical lines between rows and columns
Text in same direction
Do not merge or split cells
Caption to know name of table
Alt text to skim information

How to Create Tables

Headers, Footers & Watermarks

Important information provided elsewhere
Screen readers do not automatically read this information
Notify reader it is a draft
Same font & size as document
Outer corner of page

Accessible Content for Individuals who are Blind or Visually Impaired • large print outline

Descriptive Filenames

Benefits everyone
Helps identify document & purpose
Helps locate, open and switch between documents
Use unique names for each document

Check Accessibility

Built-in Accessibility checker starting point
Only available in some versions
Must use human judgement
Check contrast
Logical reading order
Check quality of printed handout
Keep screen readers in mind for digital materials

Inaccessible to Accessible Docs

Save as an Accessible PDF

File – Save As – Browse
File Properties (Title, author, subject, keywords)
Save as pdf
Options - Document structure tags for accessibility checked
Save

Adobe Accessibility Checker

Adobe Pro Account
Tools tab – protect and standardize
Full scan
Should only have 2 errors: manually check
Logical reading order
Color contrast

Accessible Word & PDF Fillable Forms

Microsoft Word – in developer tab
Prepare Forms Forms - Adobe Pro
Use Wizard or create

Accessible Content for Individuals who are Blind or Visually Impaired • large print outline
Provide text description of purpose of form field

Trouble-shoot, Save & Create Fillable Forms in Adobe

Making Large Copies
Step by step tutorial
Ensure quality of enlargement
Check for lines and graininess of text

Brain Break!

Creating Accessible Slides
Create slides that are fully accessible to all participants.

Similar Accessibility Tips
Use sans serif fonts
Good contrast
Use simple layout & backgrounds
Non-cluttered design template
Avoid conveying information with emphasis or color alone
Alt text

Slide Variations
Color variation
Background variation
"Eye Candy" for visual learners
Cautious with "design ideas"

Font Sizes for Slides
Introduction Slide
Title 60 pt font
Subtitles 24 pt font
Related Graphic for Interest
Additional Content Slides
Titles 40pt font or larger
32pt text size

Accessible Content for Individuals who are Blind or Visually Impaired • large print outline

No smaller than 24pt
Intro Title
Subtitle
Content Title
Text size
Level 1
Level 2

Color & Emphasis

Avoid conveying information with color alone
Here are some important words
Emphasize text in verbal presentation (loudness, pitch)
Say: "The phrase 'important words' is colored yellow and emphasized with underlining."

Quantity of Text

Limit number of bullet points
5-7 bullets/lines per slide
Total quantity of text per slide
Max 5-7 words per bullet/line
Make points short and concise
Avoid full sentences

Use Levels

Levels help with readability
Adds clarity
Skim-ability
Levels makes reading easier
Change color of bullet levels
Can change size of each level
Never smaller than 24pt font

Adding Layouts

Best to use built in slide layouts
Automatically in correct reading order

Accessible Content for Individuals who are Blind or Visually Impaired • large print outline
If you add, check reading order
Limit to three blocks of content
Unique titles for each

Columns in Slides

Warnings
Only use if necessary
Can be harder to read
Suggestions
Different colored background
No more than 6 bulleted lines

Slide Reading Order

Home-arrange-selection pane
Order appears reversed
Follow this order for Screen Readers:
Slide number
Footer placeholder
Date
Content placeholders
Slide title

Layouts & Reading Order

Meaningful Hyperlinks

Avoid "click here" or "more".
Documents, slides, websites
Use clear information about the destination (e.g. Click here to learn more about hyperlinks).

Slide Transitions

Use sound transitions
Audio cue for slide change
Easier to follow
Choose
Transitions tab

Accessible Content for Individuals who are Blind or Visually Impaired • large print outline
Sound drop down menu
Subtle sound
Select Apply To All

Check Slide Accessibility

Outline view
Displayed text spoken by screen reader
All text should be viewable
Check order
Automated checkers starting point
Manual inspection & human judgement important

How to Check Accessibility in PowerPoint

Accessible Handouts

Handout with accessible text
File Menu, Export, Create Handouts, Select outline only
Or copy the text from outline view and paste in Word document
Add styles to make fully accessible
Convert to accessible pdf

How to Create Handouts

Delivering the Presentation

It's all about the delivery!

Preparation

Handle materials before demonstration
Provide Information in advance
Adequate notice if braille needed
Copy of handout
Access on personal device

Presentation Basics

Offer preferential seating
Turn off front of room lights to increase contrast

Accessible Content for Individuals who are Blind or Visually Impaired • large print outline
Offer screen sharing
Stand away from windows
Keep board clean to maximize contrast

Screen Sharing

Access information on an interactive white board
computer with internet access
iPhone or iPad with internet access.
The teacher initiates the meeting and invites student.
The student joins the meeting.
Student has immediate access to everything presented on the screen!

Screen Sharing Options

Microsoft Teams

Must have Microsoft 365 to initiate.
Anyone invited can attend
Can access on computer or with Microsoft Teams app
Must have Teams access
Not available on all accounts

Google Meet

Free to everyone!
Great distance learning option
Access on computer or with Google Meet app

Auditory Access

Hearing Impaired, dual sensory loss, ESL
Use captions
Provide transcripts
Use visuals that do not depend on sound…and descriptions that are not dependent on visuals
Text to speech options

Accessible Content for Individuals who are Blind or Visually Impaired • large print outline

Closed Captioning
Add captions to a recorded
Live captioning options
Typed real time captions (most accurate)
Artificial intelligence (AI)

Presenting Points
Bring bullet points out individually
Discuss points as they appear
Select "Start on mouse click"
Simple, consistent animation

Describe Graphics
Identify graphic (e.g. photo, graph chart, diagram)
Verbally describe key features graphical elements
Provide only relevant info

Descriptive Language
Avoid "here", "there", and "you"
Communicate with words not facial expressions
Clear throat as indicator
Adjust tone of voice
Call on all students by name
Student know who is talking

Movies, Videos and Assemblies
Preferential seating – avoid isolation
Few words of explanation during quiet parts
Scene changes
Additions of characters
Shifts in plot if narrative is poor
Use descriptive videos
Encourage use of distance devices

Accessible Online Content & Websites
Ensure website and platform accessibility

Accessible Content for Individuals who are Blind or Visually Impaired • large print outline

Accessible Google Forms

Create a new Google form
Create unique name
Add sections to present just one question at a time.
If adding image, must add caption (no alt tag options)

Create Websites

Content Management systems
No coding skills required
Drop & drag elements
Still must ensure accessibility

Accessible Websites

www.wave.webaim.org
Web Content Accessibility Guidelines (WCAG) at w3.org
Troubleshoot solutions

How to Check Any Website

Website Typography

Universal Sans serif font (Arial, Veranda)
Limited number of font styles
Minimum size for text is 16pt
Limit variations (bold, underlined, italics, all caps)
Good contrast between text and background
Style isn't only way to convey meaning

Alternative Access

Alt text for all images and non-text content
Text transcription of recorded videos and audios

Presentation of Information

Web Accessibility Initiative: Heading & Spacing guidelines
Use whitespace & proximity
Meaningful order and sequence
Audio controls (pause, stop or mute)

Accessible Content for Individuals who are Blind or Visually Impaired • large print outline

Understandability

Headings in logical order

<h1>, <h2>, <h3>, etc.

Descriptive heading names

All links clearly labeled (not "click here") and highlighted

Multiple ways to access pages

Navigation menus

Sitemap

Search bars

Links

Predictability

Headings describe content that follows

Just one header <h1> and footer

Headers, main and footer children of body to be read by screen readers

Troubleshoot Accessibility

Fonts

Contrast

Headers

Levels

Accessible Form fields

Thank You!

Carmen Willings

Teacher of Students with Visual Impairments

Forsyth County Schools

Cumming, GA

Teaching Students with Visual Impairments

www.teachingvisuallyimpaired.com

c.willings@teachingvisuallyimpaired.com

Questions, Comments, or Feedback?