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ALL IN. ELEARNING DESIGN THAT MEETS ACCESSIBILITY STANDARD

WITH ADOBE CAPTIVATE 2017

ACCESSIBILITY...

Accessibility encompasses all disabilities that may affect access to your eLearning, including:

- auditory
 - cognitive
 - neurological
 - physical
 - speech
 - visual
- Some of these can be addressed through technology.
 - Some must be addressed through design.
 - Some may not be pertinent.
 - All can be improved by proper design.

ACCESSIBILITY...

Accessibility also helps:

- Those with *temporary* disabilities such as lost glasses or a broken arm
- Those in noisy environments or in areas where they have to keep silent
- Those for whom the language used is not their native tongue
- Other situational cases



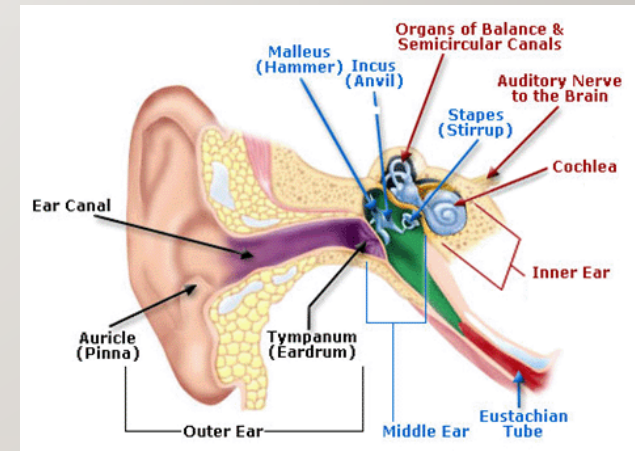
Lost in Translation: https://youtu.be/lZrgnQQnp_k

AUDITORY...



Auditory may mean:

- Various levels of hearing loss
- Total deafness
- Tinnitus
- Wearing a Cochlear Implant
- Background noise overpowering speech
- Many other conditions



Cochlear Implant Simulator: <https://youtu.be/SpKKYBkJ9Hw>

Tinnitus Simulator: <https://youtu.be/2mV-Z54fiBo>

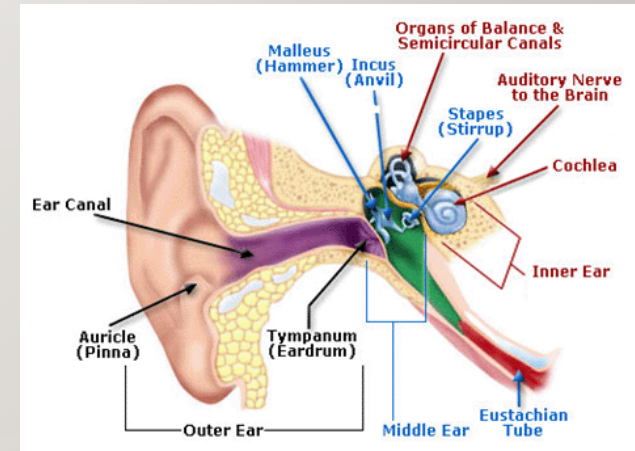
Hearing Loss Simulator: <https://www.starkey.com/hearing-loss-simulator>

AUDITORY...



Auditory problems affect many.

- Approximately **15%** of American aged 18 and over report some trouble hearing.
- Roughly **10%** of the U.S. adult population, experienced tinnitus lasting at least five minutes each year
- About **30 million** U.S. adults could benefit from using hearing aids.
- About **324,200** registered cochlear implants have been implanted worldwide. In the United States, roughly **58,000** devices have been implanted in adults and **38,000** in children.
- About **1,000,000** people (3.8 per 1,000) over 5 years of age are "functionally deaf;" more than half are over 65 years of age.



AUDITORY...

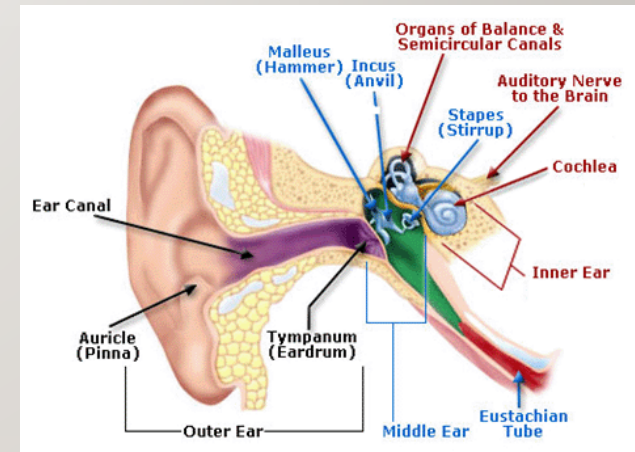


Hearing aid simulator:

<https://youtu.be/1137IzLIgQU>

What's it like to be hearing impaired?

https://youtu.be/3yQzm_36DMY



AUDITORY...



Can be mainly addressed with closed captions.

- For audio narration
- For videos

The 'Slide Audio' interface shows an audio waveform for a file named 'Slide 2 Narration.mp3'. The waveform is blue and spans from 00:00:00 to 00:00:18. Below the waveform is a 'Closed Caption' table with four rows of text.

Row	Start Time	End Time	Caption
1	0: 0: 0:0	0: 0: 3:6	Bees are flying insects closely related to wasps and ants.
2	0: 0: 3:6	0: 0:11:7	known for their role in pollination and, in the case of the best-known bee species, the European honey bee, for producing honey and beeswax.
3	0: 0:11:7	0: 0:17:8	There are nearly 20,000 known species of bees in seven recognized biological families.
4	0: 0:17:8	0: 0:25:7	They are found on every continent around Antarctica. In every habitat on this planet that contains insect pollinated flowering plants.

The 'Edit Video Timing' interface shows a video timeline with a playhead at 1:01. Below the timeline is a 'Caption' table with three rows of text. A video thumbnail is visible on the right side of the interface.

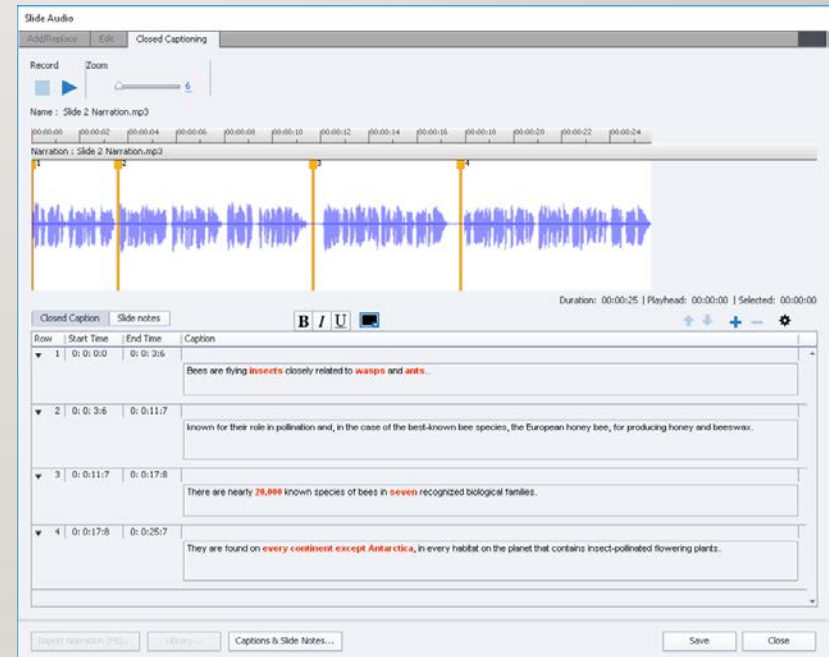
Row	Start Time	End Time	Caption
1	0: 0: 0:0	0: 0: 4:4	I'll be happy to answer your questions but I'll need you to hold for a few moments.Would that be OK?
2	0: 0: 4:4	0: 0: 5:2	Sure. No problem.
3	0: 0: 5:2	0: 0: 9:8	Thank you. Please hold.

AUDITORY: CLOSED CAPTIONS



Have been greatly improved in Captivate 2017:

- Position the captions anywhere you like.
- Size the captions to whatever width and height desired.
- Use boldface, italics, underline and any colors on any of the closed caption text.
- Change the caption font and size on any slide or all slides.
- Set the background color and opacity on any slide or all slides.
- Preset the closed captions to show on any slide or all slides.
- Save captions to Microsoft Word, edit in Word, reimport them.



Let's see how it works!

COGNITIVE...



Cognition is "the mental action or process of acquiring knowledge and understanding through thought, experience, and the senses."

- This does not mean the idea of Learning Styles is valid!
- This does mean that you must know if your learner audience includes those who have low IQs. Find ways to accommodate them.
- In most eLearning projects, this does not apply. The learners are qualified to perform their jobs and so their cognitive abilities are sufficient.

Learning Styles Debunked:

- <https://www.theatlantic.com/science/archive/2018/04/the-myth-of-learning-styles/557687/>
- <https://www.scientificamerican.com/article/is-teaching-to-a-students-learning-style-a-bogus-idea/>
- <https://www.worklearning.com/2014/08/04/learning-styles-challenge-year-eight/>

NEUROLOGICAL...



Neurological disorders are diseases of the brain, spine and the nerves that connect them.

- A neurological disability is associated with damage to the nervous system that results in the loss of some physical or mental functions. It may affect a person's capacity to move or manipulate things or the way they act or express their feelings. The way they think and process information may also be significantly influenced.
- There are more than 600 diseases of the nervous system, such as brain tumors, epilepsy, Parkinson's disease and stroke as well as less familiar ones such as frontotemporal dementia.
- **In most eLearning projects, this does not apply. The learners are qualified to perform their jobs and so they do not generally suffer from neurological disorders that prevent them from doing their jobs.**

PHYSICAL...



A **physical disability** is one that affects a person's mobility or dexterity.

A person with a physical disability may need to use some sort of equipment for assistance with mobility.

Types of Physical Disabilities:

Paraplegia	Cerebral palsy
Quadriplegia	Absent limb/reduced limb function
Multiple sclerosis (MS)	Dystrophy
Hemiplegia	Polio

PHYSICAL...



Alternative input devices: Some users may not be able to use a mouse or keyboard to work on a computer. These people can use various forms of devices, such as:

- **Head pointers:** A stick or object mounted directly on the user's head that can be used to push keys on the keyboard. This device is used by individuals who have no use of their hands.
- **Motion tracking or eye tracking:** This can include devices that watch a target or even the eyes of the user to interpret where the user wants to place the mouse pointer and moves it for the user.
- **Single switch entry devices:** These kinds of devices can be used with other alternative input devices or by themselves. These are typically used with on-screen keyboards. The on-screen keyboard has a cursor move across the keys, and when the key the user wants is in focus, the user will click the switch.

PHYSICAL...



In Captivate, most needs are automatically provided:

- In Preferences, ensure these options are checked.
- Head pointers and other devices are interpreted by Windows as clicks, click-and-drag, etc.

Project: Publish Settings

Frames Per Second:

Publish Adobe Connect metadata.

Include Mouse

Enable Accessibility

Restrict keyboard tabbing to slide items only

Hide selection rectangle for slide items in HTML5

Include Audio

Publish Audio as Mono

Play tap audio for recorded typing

PHYSICAL...



In Captivate, these are accessible:

- From Project Properties:
 - Project name
 - Project description
- Slide accessibility text
- Slide label
- Buttons
- Playback controls (The function of each button is read by screen readers)
- Question slides (Title, question, answers, button text, and scoring report are read by screen readers)

PHYSICAL...



In Captivate, you can decide:

- **Tab Order** for interactive elements
- Whether tabbing to browser URL or playbar buttons is allowed.

You can create your own assistive options too.

- Provide a pop-up for screen transcriptions that can be toggled.
- Provide an alternative high-contrast background or other options.
- Provide optional narration to assist those who are vision-impaired.
- Many more possibilities exist.

SPEECH...



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- In most eLearning projects, the learner is not required to use a microphone to interact with the learning content. Therefore, this does not usually apply.
 - Exceptions might include learning to speak a foreign language or practicing voice input into a company system. However, if learners are not able to speak or speak clearly, they are probably not qualified to perform those tasks.

VISUAL...



According to recent estimates, the major global causes of moderate to severe vision impairment are (1):

- uncorrected refractive errors, 53%
- un-operated cataract, 25%
- age-related macular degeneration 4%
- glaucoma, 2%
- diabetic retinopathy 1%

The major causes of blindness are:

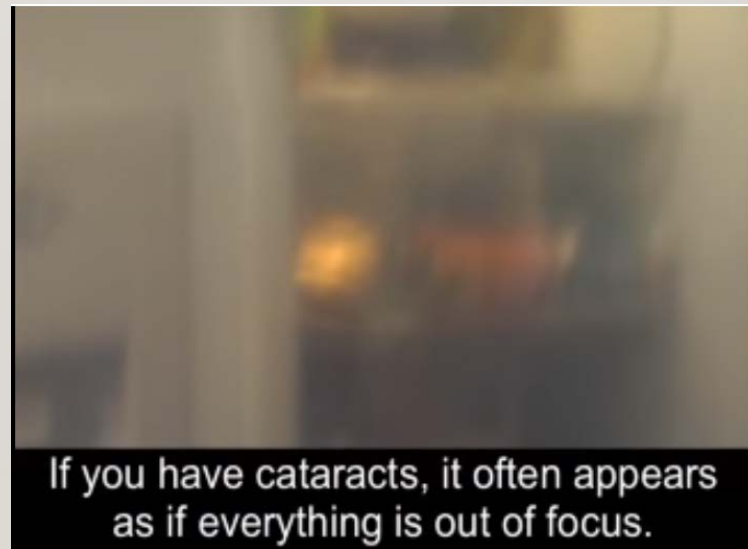
- un-operated cataract 35 %
- uncorrected refractive error 21 %
- glaucoma 8 %

VISUAL...



Want to see what different vision impairments are like?

See <https://youtu.be/KVQvqmze5SU>.



If you have cataracts, it often appears as if everything is out of focus.

VISUAL...



- **Screen readers:** Software used by blind or visually impaired people to read the content of the computer screen. Examples include JAWS for Windows, NVDA, or Voiceover for Mac.
- **Speech input software:** Provides people with difficulty in typing an alternate way to type text and also control the computer. Users can give the system some limited commands to perform mouse actions. Users can tell the system to click a link or a button or use a menu item. Examples would be Dragon Naturally Speaking for Windows or Mac. Please note both Windows and Mac have some speech recognition utilities, but they cannot be used to browse the web.

Text readers: Software used by people with various forms of learning disabilities that affect their ability to read text. This software will read text with a synthesized voice and may have a highlighter to emphasize the word being spoken. These applications do not read things such as menus or types of elements - they only read the text.

Screen magnification software: Allow users to control the size of text and or graphics on the screen. Unlike using a zoom feature, these applications allow the user to have the ability to see the enlarged text in relation to the rest of the screen. This is done by emulating a handheld magnifier over the screen.

VISUAL...



In Captivate:

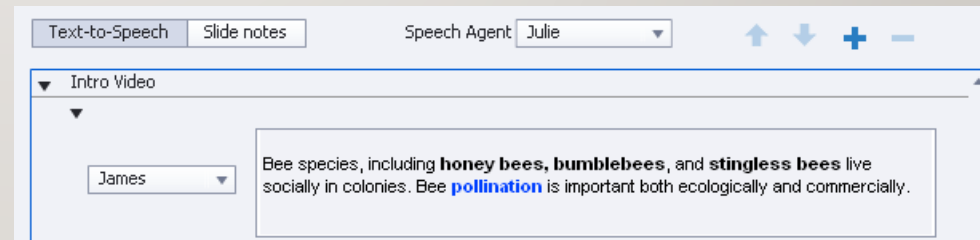
- You can provide **Text-to-Speech...**
- You can provide your **own narration.**
- Or have Captivate work with **screen readers**, for learners whose vision loss prevents them from seeing screen content or navigating with a mouse.
 - **JAWS** (Job Access With Speech) **Pay**
 - **NVDA** (NonVisual Desktop Access) **Free**

VISUAL...



Text-to-Speech:

- You can chose from a variety of voices (free):
 - Bridget (British English)
 - Chloe (French Canadian)
 - James (American English)
 - Julie (American English)
 - Kate (American English)
 - Paul (American English)
 - Yumi (Korean)
- You can copy closed captions to text-to-speech.

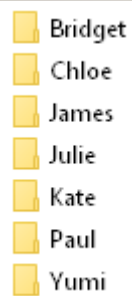


VISUAL...



Text-to-Speech:

There are two valuable kind-of-hidden utilities!



1. Go to C:\Program Files\Adobe Captivate Voices 2017 x64\VT\
 1. **UserDicEng.EXE** (or similar) is an editable dictionary for words. You can add, delete and edit words. Add any words that are mispronounced, such as specific terms within your organization, and edit until they sound correct. They will then be pronounced correctly when you use that voice in the future.
 2. **VTEditor_BRE.exe** (or similar) lets you play long passages in the voice whose folder you chose. You can use the Edit dropdown to change the speed, pitch, volume and more of text you select. This is useful to know how the voice will sound.
2. There you'll see a folder for each voice.
3. With each folder go to MI6\bin
4. You will see two EXE files there.

VISUAL...



Text-to-Speech:

- Want other voices?
- There are sites where you can generate text-to-speech in a variety of languages.
- Some cost money, others are free.
- Check <http://www.fromtexttospeech.com/>.

50000 characters remaining

Select language: Select voice:

Select speed:

US English ▼	Alice ▼
US English	Alice
British English	Daisy
French	George
Spanish	Jenna
German	John
Italian	
Portuguese	
Russian	

medium ▼
slow
medium
fast
very fast

VISUAL...



Your Own Narration:

- Record your own.
- Use professional voiceover actors.

Tip:

- I always use professional voice actors in the final version of my client projects.
- However, I use text-to-speech until then.
- Why? Because scripts change often and narrators are expensive to use each time you want to change a part of the script.

VISUAL...



Screen Readers:

- **JAWS** (Job Access With Speech) **Pay**
- **NVDA** (NonVisual Desktop Access) **Free**

Caveats:

- Best work in Internet Explorer for now.
- Accessibility standards were not well-defined in HTML5.
- This will be remedied in the next major release.
- Must ensure that any narration or sounds you include do not play at the same time as the synthesized speech.

TIPS AND ADVICE



What does Captivate do to be 508 Compliant?

<https://elearning.adobe.com/2016/08/what-does-captivate-do-to-be-section-508-compliant/>

<https://helpx.adobe.com/captivate/using/creating-accessible-projects.html>

Great Advice from Brett Helm:

<https://elearning.adobe.com/2017/03/thoughts-on-accessibility-naming-and-descriptions-best-practices/>

<https://elearning.adobe.com/2017/01/accessibility-lessons-learned/>

<https://elearning.adobe.com/2017/02/using-smart-shapes-in-an-accessibility-enabled-project/>

<https://elearning.adobe.com/2017/03/common-accessibility-issues/>

And Steve Warwick:

<https://elearning.adobe.com/2017/07/captivate-popup-manager-with-508-accessibility-support/>