Online Learning Delivery
Ensuring Accessibility for Students who are Deaf/Hard of Hearing[1]

> *Please be aware that listening to recordings or transmissions of speech can be extremely challenging and fatiguing for students who are deaf/hard of hearing*
> Read More Here: **Hearing Loss and Recorded/Transmitted Speech**

Whether it be for inclement weather, water main breaks or to prevent the spread of infectious disease, more and more schools are turning to online learning days so that education can continue uninterrupted. Although this is not an exhaustive list and additional accessibility considerations may need to be made based on individual needs, here are some general considerations to keep in mind while planning for online learning days in order to ensure access to content for students who are deaf and hard of hearing.

1. Provide All E-learning Materials in Print

2. Ensure Closed Captioning for All Visual Media

Students who are deaf and hard of hearing will without a doubt **rely on** the captioning of all auditory information (e.g., lectures, videos) presented through on-line learning. Please ensure that captions or subtitles have been created for the material.

The next step is determining which platform is available and compatible with the captioning features needed by students. *See Addendum A - Captioning and Online Learning Platforms, for specific platform captioning information.*

The various types and means of captioning are outlined below.

Automated Captioning (Computer Generated Captioning)

While automated captioning has improved greatly in the past few years in terms of accuracy, speed and exposure to more words, it is important to recognize that inaccuracies will still occur and that this method of captioning may be too unreliable to ensure equal access to the on-line curriculum.

The quality of the automated captioning is HEAVILY dependent on the audibility and quality of the sound (the input) and can be affected by:
-   Rate of speech
-   Accents
-   Background noise
-   Distance from the talker to the microphone

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[1] Developed by: Educational Audiologists & DHH Teacher Consultants, Regional Collaborative Service Delivery, Inclusive Learning & Alberta Health Services, Newton Office. Contact krista.yuskow@epsb.ca

- Quality of the microphone (use an external microphone instead of the built-in microphone)

The "success criteria" for optimal auto-captioning input includes:
- Each speaker has their own microphone
- One speaker speaks at a time
- Background noise is minimized as much as possible
- Normal to slower rate of speech

Embedded Captions

Many platforms/apps can show embedded captions in their program which means the user can view a lesson led by a teacher or participate in a group meeting while watching the captions of the discussion in the same window.
- While some platforms allow for embedded captions during live use this may not always be the case for pre-recorded video content, including your pre-recorded lectures and/or inserted curricular videos

Non-Embedded Captions

If the platform of choice does NOT offer embedded captions, the services of a live captioner via a Communication Access Realtime Translation (CART) are available.
- Captioning is provided by a professional live captioner who can, with high-accuracy, caption synchronously with the speaker
- CART services can be either **on-site** or they can provide captioning **remotely**

When captioning remotely:
- The presenter/instructor wears a remote (Bluetooth) microphone that sends their voice to the live captioner off-site via the internet.
- The live captioner can hear the audio and captions the voice as it happening in real time
- The CART captioned text is then sent to a program and displayed to your student in a separate browser window
- *See Addendum D - Accessing remote CART Services in New Hampshire*

Captioning Pre-Made Videos

If you are using pre-made video content that isn't already captioned there are both automated and online services available.
- Embedded, automated captioning is free and efficient but can be inaccurate or may need significant editing (if editing is possible in the platform being used)
- Online captioning is significantly more accurate but can be time consuming and has an associated cost (costs vary - e.g. $200/mo, $5/minute)
    - The process typically involves uploading a video, which is then either auto or professionally captioned, returned to you for accuracy check/editing and then uploading to your platform of choice
- *See Addendum B - Post-Production Captioning*

3. Provide Adequate Visual Access
If teachers will be presenting either recorded or live lectures, students who are deaf/hard of hearing will need to be able to **see the speaker's face** to access important speech-reading cues
- Ensure good lighting and that your face is not back-lit
- Ensure that your face and lips are clearly visible on the screen (e.g. not obstructed by the microphone)
- In the event of student/peer contributions to a live lecture, please allow students to turn on their camera so your student who is deaf/hard of hearing can see the talker's face as well as your own
- In addition to close-captioning your lessons and videos it is **strongly recommended** that students who are deaf and hard of hearing can also see your face while you are narrating your lesson (e.g. Teacher explaining the concept that is being presented on a slide show)
    - ***Screencastify and Loom are recording platforms that provide <u>whole-screen</u> recordings with a <u>simultaneous recording</u> of your screen, captions and video of your face***
    - Please see **here for Screencastify and Loom how-to information and videos**
- *Microsoft Teams* offers a feature that allows the user to blur the visual background which helps keep the focus on the talker's face

4. Provide Adequate Auditory Access
When listening to e-lectures, students who are deaf/hard of hearing will need to have **good quality auditory access**.
- The built-in computer microphone will not provide adequate sound quality for your students who are deaf/hard of hearing - an external, preferably boom-style microphone, is strongly encouraged
- If the curriculum calls for multiple presenters or class participation:
    1. Ask that non-speakers stay muted to minimize the background noise
        - Most platforms also allow you to mute all or any students from your end
    2. Ask that each speaker announce their name before they begin speaking
        - E.g. "This is Whitney. I have a question." Or "This is Mrs. Spagnola."
- Students may need to be able to pause or rewind and review recorded materials so having the option, through recorded versus live lectures, is important.
- PLEASE be sure that your students have access to their personal DM/FM systems - they will need them to plug into their computers to adequately access online lecture delivery

Remember that even with the FM/DM system your student will still be at a listening disadvantage.

5. Provide Adequate Language Access ~ American Sign Language
Students who need material presented in American Sign Language will benefit from either having their assigned educational interpreter made available via video conference platform (e.g. Skype, Facetime, Zoom) or using Video Remote Interpreting (VRI).
- Note: VRI is not intended for all-day interpreting of instruction
- Please contact your Teacher of the Deaf/Hard of Hearing for student-specific information

Addendum A- Captioning and Online Learning Platforms

Platform	3rd Party Captioning with CART	Embedded Captioning	Additional Info	Reference Link
Zoom	✔		*Allows captions to be visible during recorded play-back*	https://support.zoom.us/hc/en-us/articles/207279736-Getting-started-with-closed-captioning
Cisco Webex	✔		*Allows for a downloaded transcript of the captions*	https://help.webex.com/en-us/WBX47352/How-Do-I-Enable-Closed-Captions
Adobe Connect	✔		*Allows for a downloaded transcript of the captions*	https://www.adobe.com/products/adobeconnect/apps/closed-captioning.html
Google Hangouts Meet		✔	*Allows for a downloaded transcript of the captions Requires: Tactiq Chrome Extension*	https://gsuiteupdates.googleblog.com/2019/04/live-captions-in-meet.html
GoToMeeting		✔	*Allows for a downloaded transcript of the captions*	https://support.goto.com/meeting/help/transcriptions-smart-meeting-assistant-g2m040030
Skype (Version 14)		✔		https://support.skype.com/en/faq/FA34877/how-do-i-turn-live-captions-subtitles-on-during-a-skype-call?q=captioning
Microsoft Teams		✔		https://support.office.com/en-us/article/use-live-captions-in-a-teams-meeting-4be2d304-f675-4b57-8347-cbd000a21260
Flipgrid		✔	*Allows captions to be visible during recorded play-back*	https://help.flipgrid.com/hc/en-us/articles/360040764374?fbclid=IwAR3hOgLt8cJs0VAOyOSOjjsuqs8-wkTQacO3Y6CSaxaRxAQvGpot47aqQxg
Google Slides		✔	*How to Video: Captioning with Google Slides and Screencastify*	https://support.google.com/docs/answer/9109474?hl=en
YouTube		✔	*Allows captions to be visible during recorded playback*	http://youtube.com/
Microsoft Powerpoint		✔		https://www.microsoft.com/en-us/translator/help/presentation-translator/
Apple Clips		✔	*Allows captions to be visible during recorded playback.* Can only be recorded on an iOS device but can be exported and viewed on any device.	https://support.apple.com/en-ca/HT207848

Addendum B - Post-Production Captioning

Google Slides (Embedded/Auto Captioned)
Only video content from YouTube can be added to Google slides.

1. Open a video and copy the URL
2. Open Google Slides and "Insert – Video" onto a blank slide and paste the URL into this step
3. "Present" your Slides
4. Before starting to talk to playing any video links, turn on CC (Closed Captions) on the Google toolbar that pops up at the bottom of the screen
    - Do not tap the CC button directly on the embedded video
5. Turn the volume up when you play the video
6. Change the captions size and location (top vs bottom of the screen)
    - These adjustments can be made within the CC button

YouTube (Online/Auto Captioned)
   - AutoCaptions videos and then allows for editing
   - https://support.google.com/youtube/answer/6373554?hl=en

Rev
   - Online/Professionally Captioned
   - https://www.rev.com/checkout/captionfiles

3PlayMedia
   - Online/Professionally Captioned
   - https://www.3playmedia.com/solutions/services/captioning/

Addendum C - Additional Resources for DHH E-Learning Accessibility

[Described and Captioned Media Program](#)

[Online Video Captioning Standards](#)

[DIY Captioning for YouTube](#)

[Online Accessibility Checklist](#)

[Caption Consulting](#)

[Captioning Options for Videoconferencing and Learning Management Strategies](#)

[ACS Remote Captioning](#)

[Video Remote Interpreting](#)

[Skype Subtitles](#)

[Microsoft Translator](#)

[US DOE COVID-19 Guidance](#)

[COVID-19 and Students with Disabilities](#)

[Captioning](#)

[Options for Videoconferencing and Learning Management Systems](#)

Addendum D - Accessing Remote CART Services in New Hampshire

Below are CART providers that serve New Hampshire. Captioned text via CART is sent from a remote captioner and then displayed to your student in a separate browser window.

Denise Gracia	denise@cartcaptioner.com 603.930.6674 (cell/text)