

COMPUTER HEADSETS FOR ONLINE LANGUAGE LEARNERS AND INSTRUCTORS

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Why use a headset?

Using a headset, rather than relying on your device's built-in microphone and speakers, improves clarity both for you and for your listeners.

When don't I need a headset?

You may not need a headset if:

- your device's built-in microphone is very good (higher-end laptops may have these)
- your built-in (or external) speakers are very good (higher-end laptops may have these)
 - however, you should be aware of the potential for "echo" problems for your listeners any time you are using speakers rather than headphones
- your room is consistently very quiet (no roommates or colleagues, no machine or equipment noise, no traffic noise, no noise from neighbors, etc.)
 - note: being outside while engaging in a video conference is never recommended due to wind, traffic, animals, etc.
- having your volume turned up is not a distraction to others nearby
- you are able to stay a consistent distance from your device's built-in microphone and speakers
- your hearing is very good and your voice is steady and strong
- you have successfully tested your setup with a friend via Zoom and you have verified the quality of your audio without a headset

Why not just use the earbuds that came with my phone, or AirPods, or another similar product?

Wired earbuds/microphone combos, although convenient and inexpensive, can cause numerous noise problems for your listeners. Since the microphone is not able to be repositioned, friction noise (from rubbing against your shirt, hair, etc.) can be easily transmitted—as well as possibly affecting clarity of higher frequencies due to unideal placement in relation to your mouth. Wireless earbuds, such as AirPods, don't suffer from friction noise but still restrict the ability to customize microphone placement for best input. Most wireless earbuds also incorporate noise-canceling technology that could affect the quality of your audio received by others.

What are the most important factors to consider when selecting a headset?

Focus on comfort, clarity, and compatibility.

Comfort: Consider how long you will be wearing this headset each day—it is important to have a headset that is lightweight and doesn't pinch or constrict you. Most people prefer less bulky headsets that offer a "sleeker" look, but this choice is very personalized. Remember that a higher price doesn't necessarily mean higher comfort! If possible, try on several models before making your purchase. Headsets that require batteries or have internal rechargeable batteries (for wireless connectivity, noise cancelation, etc.) will be heavier.

Clarity: Can you hear well with your headset? Language learning is full of nuances—be sure you can hear subtle details. You must also be mindful of your listeners' experience with the audio received. Are you able to easily position the microphone boom in a way that is comfortable for you while avoiding distracting breath or plosive noise? In what environment do you expect to primarily be using the headset: is it typically quiet, or will you need a product with noise-canceling features?

Compatibility: Consider your laptop and other devices. What connectivity options do they offer (ports, jacks, wireless)? Most likely you will need a headset that connects via USB-A, but some laptops may only offer USB-C ports. If this is the case, you might need an adapter or USB hub. You might also consider a headset that connects via a standard "headphone" 3.5mm (1/8") jack. If you prefer a wireless connection, be aware of whether the device utilizes a Bluetooth connection or has a USB receiver dongle.

Wired vs. Wireless

While wired connections are more reliable, you may need a wireless headset if you expect to move around the room a considerable amount while teaching or learning. These devices are often more expensive than wired headsets, but generally come with a wealth of features. Two technologies are available: traditional DECT wireless and Bluetooth. A traditional wireless connection has a greater distance range but a higher potential for interference, while Bluetooth is generally a more stable connection with a smaller possible range of distance between headset and computer. Be aware of the possibility for signal dropouts due to distance or interference, batteries dying mid-class, and other issues. If you decide on wireless, you may also want a wired backup. Wireless headsets require recharging (or periodic replacement of batteries), so take into consideration battery life and recharging time.

HEADSET SPECIFICS/TERMINOLOGY

Noise-canceling headphones: Noise-canceling headphones remove noise in the background environment of the listener. Headphones can “cancel” noise in two ways—actively or passively. Active cancellation uses additional small microphones to “listen” to the noise in your environment and emit waveforms that will cancel out the noise. Active cancellation requires batteries or power via USB. Passive cancellation relies on acoustic isolation provided by foam or other padding in the headphones. Passive cancellation is not as thorough as active cancellation, but meets the needs of most users. If you anticipate working frequently in a very noisy location (such as a large open office or other public space), active noise cancellation may be a necessary feature. Active noise cancellation, in models that offer it, is generally a feature that can be engaged or disengaged as desired. Be aware that environmental noises canceled by your headphones might still be picked up by the microphone!

Noise-canceling microphone: Noise-canceling microphones remove noise from the environment of the speech producer. Like headphones, microphones can “cancel” noise either actively or passively. Active cancellation uses additional microphones to “listen” to the noise and will “subtract” those sounds from the signal your audience will hear. Passive cancellation utilizes directional microphones, which pick up sounds coming from a specific direction (in this case, the direction of your mouth). While some noise from the other directions can seep into the signal, it is generally not enough to be a problem unless the background noise is very loud or consistently occurring. Active noise cancellation might be necessary and valuable if you expect to work mostly in a loud environment, but it has a greater potential than passive cancellation does to “go awry” and cut off too much, which may have an impact on the accuracy of speech in the context of language teaching and learning.

Frequency response: The frequency response is the range of frequencies (the pitch of a sound, measured in Hertz) able to be captured or recreated by that device. In a headset, you need to be aware of the frequency responses of both the microphone and the headphones. Nearly all of the frequencies within the human vocal range fall between 100Hz and 8kHz, so it is important that the headset’s microphone and headphone frequency responses include that range. While all of the headsets included in this list of recommendations will meet the needs of language teachers and learners, if you plan to also use your headset for listening to music you will want a pair with an even more broad headphone frequency response since the range of human hearing is much wider than just the vocal frequencies—from 20Hz to 20kHz. (For example, a headset that cannot reproduce sounds below 150Hz will leave you feeling like the “lows” of your music are missing!)

Control module: Many headsets offer easy-access controls for volume and mute. These controls may be “in-line” (with the control buttons inset in the headset’s cable) or “on-ear” (with the control buttons on the headset itself).

Monaural and binaural headsets: A monaural headset covers only one ear, while leaving the other free. A binaural headset covers both ears. A two-ear style is generally preferable when learning online, especially for language students, and helps maintain your focus. However, if you need to remain aware of your environment (for childcare or other purposes), a one-ear style might be better. Most of the headsets included in this list of recommendations are available in

both monaural and binaural models. Some monaural headsets have a microphone boom that rotates 330°, allowing you to wear the headphone on either ear.

Mono and stereo audio signals: When using speakers or a binaural headset, a mono audio signal provides the same signal to the speakers on both the left and right sides. A stereo audio signal will provide discrete audio signals for each side, allowing a “stereo image” (the perception of localization of a sound) when applicable. Nearly all binaural headsets allow for stereo playback. When listening to music, watching streaming videos on Netflix, etc., a stereo audio signal is common. However, Zoom and most other video conferencing platforms utilize mono audio signals by default. Zoom does allow users to enable stereo audio, but since most audio inputs used in video conferencing (microphones) send only mono signals, it generally is not necessary to change this setting.

UC/MS: When browsing headset selections, you will sometimes come across multiple versions of the same model number—with the differences labeled “UC” and “MS.” UC stands for *Unified Communications*, while MS stands for *Microsoft Certified*. These designations simply refer to different pre-set features that relate to Skype for Business/Lync (for MS models) and other programs, but the differences are very slight. For general purposes, it’s best to select a UC model.

Audio Processing/EQ: Nearly all but the most inexpensive headsets offer some embedded equalization or audio optimization to help better transmit the vital vocal frequencies. Some high-end models (such as the Logitech Zone) offer the ability to customize these settings via an app or computer program, but most do not. In general, you do not need to worry about purchasing a model that includes automatic EQ or signal processing—it just provides subtle and constructive “tweaks” to your voice to better help your listeners. Note: if you have hearing loss in a certain range (such as high frequencies), you should look into this audio optimization further, either online or with the assistance of the university’s office of adaptive technologies.

ZOOM-SPECIFIC CONSIDERATIONS

Zoom Desktop Client Recommended Devices:

<https://support.zoom.us/hc/en-us/articles/360026690212-Supported-USB-HID-devices-for-the-Zoom-Desktop-Client>

Zoom Audio Adjustments

Zoom includes several built-in audio processing options (to suppress background noise, etc.), which generally serve to subtly improve the overall audio quality. However, if the audio that either you hear or your listener receives is frequently “choppy” or unnatural sounding, you (or they) might wish to try disabling this processing. To do so:

- a. From the Zoom client, click the gear icon () in the upper right.
- b. Select Audio from the menu on the left.
- c. Under the microphone settings, uncheck Automatically adjust volume.
- d. Click Advanced in the lower right.
- e. Check the box labeled Show in-meeting option to "Enable Original Sound" from microphone.
- f. From the drop-down menus under "Audio Processing", select Disable for both "Suppress Persistent Background Noise" and "Suppress Intermittent Background Noise."
- g. Close the settings window.
- h. At the top of the meeting window, a Turn [on/off] Original Sound button will now be visible. Turn original sound on to transmit more natural audio to other participants. Turn it off to restore default settings.

Temporary Adjustments

“Choppy” audio may also be due to a weak WiFi signal, low internet bandwidth, or heavy concurrent WiFi usage by others. If these hindrances cannot be improved, it may be necessary to turn off video and go audio-only for the remainder of your Zoom session. Make sure this temporary measure is acceptable to your instructor/students, as a video presence is—of course—important in a language class!

RECOMMENDED HEADSETS FOR LANGUAGE LEARNING

Basic

Logitech H111 (3.5mm)
Logitech H540 (USB-A)
Sennheiser/EPOS PC 8.2 CHAT (USB-A)
Sennheiser/EPOS Impact SC 60 (USB-A)
Jabra Evolve 20 (USB-A and 3.5mm)

Mid

Logitech H570e (USB-A)
Sennheiser/EPOS Adapt SC 165 (USB-A or USB-C and 3.5mm)
Jabra Evolve 40 (USB-A or USB-C and 3.5mm)
Jabra Evolve2 40 (USB-A or USB-C)
Plantronics/Poly Blackwire C3225 (USB-A or USB-C and 3.5mm)

Luxury

Sennheiser/EPOS Impact SC 665 (USB-A or USB-C and 3.5mm)
Jabra Evolve 80 (USB-A or USB-C and 3.5mm)
Plantronics/Poly Blackwire 5220 (USB-A or USB-C and 3.5mm)

Wireless/Bluetooth Options

Logitech H820e (USB-A, wireless, 300 ft range)
Logitech Zone (USB-A or USB-C and Bluetooth, 100 ft range)
Sennheiser/EPOS Impact MB Pro 2 (Bluetooth, 82 ft range)
Jabra Evolve 75 (USB-A and Bluetooth, 100 ft range)
Plantronics/Poly Voyager Focus UC (USB-A or USB-C, Bluetooth, 98 ft range)

Models with Active Noise-Canceling Headphones

Logitech Zone (wireless)
Sennheiser/EPOS Impact SC 665 (wired, ANC model only)
Jabra Evolve 75 (wireless)
Jabra Evolve 80 (wired)
Plantronics/Poly Voyager Focus UC (wireless)

Models with Active Noise-Canceling Microphones

Logitech H820e (wireless)
Logitech Zone (wireless)
Sennheiser/EPOS Impact SC 665 (wired)
Sennheiser/EPOS Impact MC Pro 2 (wireless)
Jabra Evolve2 40 (wired)
Plantronics/Poly Voyager Focus UC (wireless)

Budget Models *(inexpensive options for each connection type)*

Logitech H111 (3.5mm)
Jabra Evolve 20 (USB-A and 3.5mm)
Logitech H540 (USB-A)
Plantronics/Poly Blackwire C3225 (USB-A or USB-C and 3.5mm)