

Sound

📌 Objectives

- Understand that sound quality is very important
- Evaluate your and others sound quality and know how to improve it
- Test tips and tricks for achieving good sound quality

Instructor note

- Teaching: 10 min
- Exercises: 10 min

The importance of audio

- Pleasing audio quality makes events much more enjoyable
- Audio is one of the most important things you can control
- Things that can go wrong:
 - Too quiet
 - Too loud
 - Instructors' volumes imbalanced
 - Background noise
 - Low-quality/breaking up audio hard to hear.
 - "Ducking" (first words lower volume, or lower volume other times)

Tips for good sound quality

- Have a headset with mounted microphone
 - Even if you have a professional external microphone, it doesn't matter if your room has bad acoustics.
 - The close pickup can't be beat with normal tools.
 - As long as it's headset mounted, price doesn't seem to matter *that* much.
- Don't use Bluetooth
 - Bluetooth can have too much latency (300-500ms)
 - This may seem small but for interactive work, it's a lot
 - Use a wired headset, or wireless with a non-Bluetooth USB plug (like gaming headsets have). These have much lower latency.
 - Bluetooth 5 can have much lower latency, but you probably shouldn't count on that without testing.

- It can also have lower sound quality on some devices due to bandwidth limitations.
- Once you have a headset, turn input noise cancellation to low (wherever it might be: headphone, meeting software, etc.).

Balancing and dynamic adjustment

- It's important that instructors volumes match.
- An exercise will go over a systematic procedure for matching volumes.
 - Practice so that you can do this quickly.
- May need re-adjusting when instructors swap out or start getting excited.
- An exercise below will demonstrate our procedure.

Speak up when there are problems

- If you notice someone with audio issues, let them know right away (voice if bad, or chat/notes if less urgent).
- Take the time to fix it as soon as practical.
- Make a culture of *speaking up, helping, and not suffering*.

Recommendations

- Procure some reasonable headset.
- Low/medium-priced gaming-type headsets have worked well for us.
 - (gaming headsets usually aren't Bluetooth, because gaming needs low latency.)
- Show this page to your workplace (if you have one) and call a good headset work equipment.

Exercises

Sound-1: Evaluate sound quality

It's important to be able to discuss with others the quality of their audio. They can't hear themselves, after all.

- Within the teams, discuss each person's audio quality and what kind of setup they have.
- Be respectful and constructive (and realize that people came prepared to listen, not teach).
- Consider, for example
 - Volume
 - Clarity
 - Background noise
 - Noise cancellation artifacts
 - "Ducking": first words at lower volume or missing

- Discuss how to bring this up during other courses and meetings.

👉 Sound-2: Adjust volume up and down

In addition to individual quality, it is important that sound is balanced among all instructors. Have you ever been to a event when one person is too quiet and they can't make themselves any louder? And they can't adjust it?

You should ensure that you have a range of volumes available to you. You might have to look into several different locations in order to make the full adjustment ().

- Go to your sound settings
- One by one, each person
 - Adjusts their microphone volume so quiet that they can't be heard.
 - Adjusts their microphone volume so that it is extremely loud (this may require going beyond 100% if possible).
- Basically, make sure you aren't so close to either end that you have no potential to make an adjustment in that direction.
- Everyone tries to set the volume to something reasonable, in preparation for the next exercise.

Once you know where these settings are , you won't be panicked when the volume is too low or high during a course.

👉 Sound-3: Do a balance check

It's important that instructor audio is balanced (the same volume). But how can you do this?

- Pick a leader.
- The leader decides the order ("I am first, then [name-1] and [name-2]")
- The leader says "one". Everyone else says "one" in the order specified.
- The leader says "two". Everyone else says "two" in the order.
- The leader asks for opinions on who they think is louder or softer. If there are more than three people, you can figure it out yourselves. With less than two, you have to ask someone in the audience.

Example:

- Leader: Let's do a sound check. I am first, then AAA and BBB.
- Leader: One
- AAA: One
- BBB: One
- Leader: Two

- AAA: Two
- BBB: Two
- Leader: Three
- AAA: Three
- BBB: Three
- Leader: How did that sound to everyone?
- [Someone else]: Leader and BBB were pretty similar but AAA is a bit lower.

Summary

📌 Keypoints

- Audio quality is important and one of the most notable parts of the workshop.
- Improving audio isn't hard or expensive, but does require preparation.