



**Recording 101: The Basics & How It Can Transform Your Studio**  
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**Microphones for Studio Teachers:**

|   | Handheld/Standalone  | Plug & Play   | Condenser+Audio Interface   |
|---|--|---|---|
|  | Portable, batteries<br>Quick recording<br>Optional external mic ports<br>Optional built-in video | Direct record to phone/laptop<br>Consumer pricing<br>Convenient, simple | Sensitive, very high quality<br>Condenser pair=sound depth<br>Video separated from audio<br>Great for piano (treble/bass) |
|  | Memory card download<br>Audio/Video fixed together   | Audio/Video fixed together<br>App can be glitchy<br>Need tripod/stand   | Can be \$\$ to \$\$\$\$<br>More setup/experimentation<br>Needs audio interface<br>Needs recording software (DAW)          |

**Popular Handheld Microphones/Brands:** Zoom H-series (many types), Zoom Q8 (w/ video), Tascam DR-series, Tascam DRV1-HD (w/ video), Sony PCM-D Series

**Plug & Play:** Shure MV-88, Rode NT-USB

**Condensers:** Rode M5/NT 55, Rode NT1, Line Audio (CM4, OM1) → good value from Sweden, Beringer C2 (budget option!), Audio-Technica AT 2020/2035, AKG P-series, AKG C414, Shure KSM 171, Shure SM7B, Sennheiser MKH series, Neumann KM 184/185, Neumann U87 (\$\$\$\$\$)

\*By no means is this list comprehensive or exhaustive! There are hundreds of options, so consult a microphone expert before purchasing:

<https://www.sweetwater.com/insync/studio-microphone-buying-guide/>

Nahre Sol, Mic Comparison: [https://www.youtube.com/watch?v=bAoAMfY\\_Xlw&t=309s](https://www.youtube.com/watch?v=bAoAMfY_Xlw&t=309s)

### Definitions & Examples

**Digital Audio Workstation:** Device or program for recording, editing, producing audio

- A few examples: Garage Band (Mac), Audacity (free), Reaper (nominal \$), Pro Tools (basic, free), Logic Pro (\$\$\$), Cubase (\$\$\$), Ableton (\$\$\$)

**Audio Interface:** Processing hub for a microphone setup. Plug in and control microphone gain.

- Many options on the market. Note the number of microphone inputs.
- Popular Brands: Focusrite, Presonus, Zoom, Beringer, Steinberg, Apollo

**Phantom Power:** Provides a power source for microphones that need the extra boost (provided by the audio interface)

**Video Editing Programs:** iMovie (Mac), Videoleap (free/\$), DaVinci Resolve (free version), Reaper (video editing capabilities), Final Cut Pro (\$\$\$), Adobe Premiere Pro (\$\$\$)

**Other Equipment:** Headphones (open vs. closed back), 1/4" XLR Microphone Cables, Microphone Stand (Recommended: Boom stands w/ arms that are adjustable), Memory Storage (for large files), such as an external hard drive

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### **"The Basics" Recording Checklist**

- ☐ Finding the Sweet Spot: Every room and piano is different
  - Let your ears guide you
  - Further away from the instrument = more room sound
  - No formula for this, safe place to start is about 2-6 feet away from the piano
  - Use the lid as your guide
- ☐ Set up the DAW
  - Microphone inputs (1 & 2)
  - Settings/Preferences: Sample rate of 48 kHz and 24-bit depth
- ☐ Check Levels/Adjust Gain
  - Play the loudest passage of your piece
  - Check that the peak signal level is near -12dB (-6dB is the max)
  - Phantom Power on? \*dB=decibel, unit of sound measurement
- ☐ Record
  - Press record on both audio and video devices
  - Announce the take # and clap loudly so that the video/audio can be synced
  - Wait 5 seconds before and after playing
- ☐ Optional: Touch Up Audio (see references for more reading)
  - EQ-ing, normalizing gain
  - Panning the sound (for space)
  - Reverb
  - Limiters
- ☐ Sync Video
  - Open movie editing software
  - Match up clap wave form, check for accuracy, mute audio from video clip, trim
  - Optional: Add a fade in or out

## Cameras for Studio Teachers:



| Phone Cameras  | Camcorder  | DSLR/mirrorless   |
|--|--|---|
| Portable, accessible<br>Quick recording                                  | Designed for video recording<br>Consumer pricing<br>Convenient, simple | High resolution<br>Many controls<br>Many computer connections               |
| Few controls<br>Few connections<br>Storage depends on your phone's model | Audio often not good<br>Few controls<br>Computer connections can vary  | Can be \$\$ to \$\$\$\$<br>More setup/experimentation<br>Needs memory cards |

\*Phone/Tablet/iPad cameras often provide 4K recording capabilities ( should consider!)

### Definitions & Examples

**Capture Card:** a hardware device that allows a camcorder or camera to connect and send video signal to your computer. This required to connect a camera to a computer!

- Examples: [RULLZ Mini 4K Capture Card](#) (\$), [Elgato Camlink Capture Card](#) (\$\$), [ATEM Black Magic Mini](#) (\$\$\$)

**Clean HDMI Out:** means that a camera or camcorder can send a video signal to your computer that is only what the light sensor is receiving, without any extra information display that cameras often show.

**Stream Key:** a special code that allows a streaming software to communicate with a streaming platform and send your video content to be live streamed. Each streaming platform has its own unique stream key, so in order to link a streaming software with your preferred platform, you need to find this key in your account settings.

**Live Stream Programs:** *Live Stream Softwares:* Open Broadcasting Software (“OBS”, free), StreamLabs OBS, Twitch; *Live Stream Platforms:* YouTube, Facebook Live, Twitch

**Other Equipment:** tripod, lighting, hdmi cables, camera lenses

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### “The Basics” Livestreaming Checklist

- ☐ Set up your camera
  - Make sure the lighting is clear and consistent!
  - Set up the camera at an angle that looks natural, and so that the performer’s hands and face are visible
  - Make sure the camera is powered and connected to the capture card, which is connected to your computer
- ☐ Set up your audio devices
  - Make sure mics and mic stands aren’t blocking any sight-lines

- ☐ Set up stream
    - YouTube will guide you through each step
    - You can also prepare live streams in advance!
  - ☐ Set Up OBS
    - Get the stream key from YouTube and input it into OBS - tutorial [here!](#)
  - ☐ Check Levels/Adjust Gain
    - Play the loudest passage of your piece
    - Check that the peak signal level is near -12dB (-6dB is the max)
    - Phantom Power on? \*dB=decibel, unit of sound measurement
  - ☐ Start Stream and Record
    - Press “Start Stream” and “Start Recording” in OBS
    - Press “Go Live” on YouTube stream
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## Transform Your Studio

- Competition Recording—Affordability, quality, practice for your students
- Recording teaching repertoire, at exactly the tempo your student needs
- Recording duet parts to play
- Virtual recitals recorded/streamed at your studio - better quality
- Recording as a teaching and learning tool:
  - Metacognition: observing when problems happen and thinking about what caused them and how to improve
  - Organization skills: keeping track of progress
  - Listening skills: comparing what was heard while performing and what actually happened
  - Confidence: getting used to high-pressure situations
- Entrepreneurship: for you and your students
  - Creating videos to promote your studio
  - Many students who pursue music today are interested, even focused on music production: creating and recording their own music
  - Many colleges and universities are responding to this by creating robust music production programs - the schools that we work at are all doing this!
  - Making recording and production technology a cornerstone of your studio practice will both help:
    - Your student’s creativity and entrepreneurial interests: many Gen Z and Gen Alpha students want to work as social media musicians and performers
    - Recruitment for your studio or program: more students will be interested you as a teacher if you can incorporate this critical element into your practice

## Further Resources

*Home Recording for Dummies* (Jeff Strong)

*Microphones for the Recording Musician* (Phil O'Keefe/Craig Anderson)

*Recording Classical Music* (Robert Toft)

*Classical Recording: A Practical Guide in the Decca Tradition* (Haigh, Dunkerley, Rogers)

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Do you have creative ways that you already use recording technology in your teaching studio?

We would love to hear from you and exchange ideas!

Contact us through our websites: [www.joshuattan.com](http://www.joshuattan.com) | [www.alexanderzhumusic.com](http://www.alexanderzhumusic.com)

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