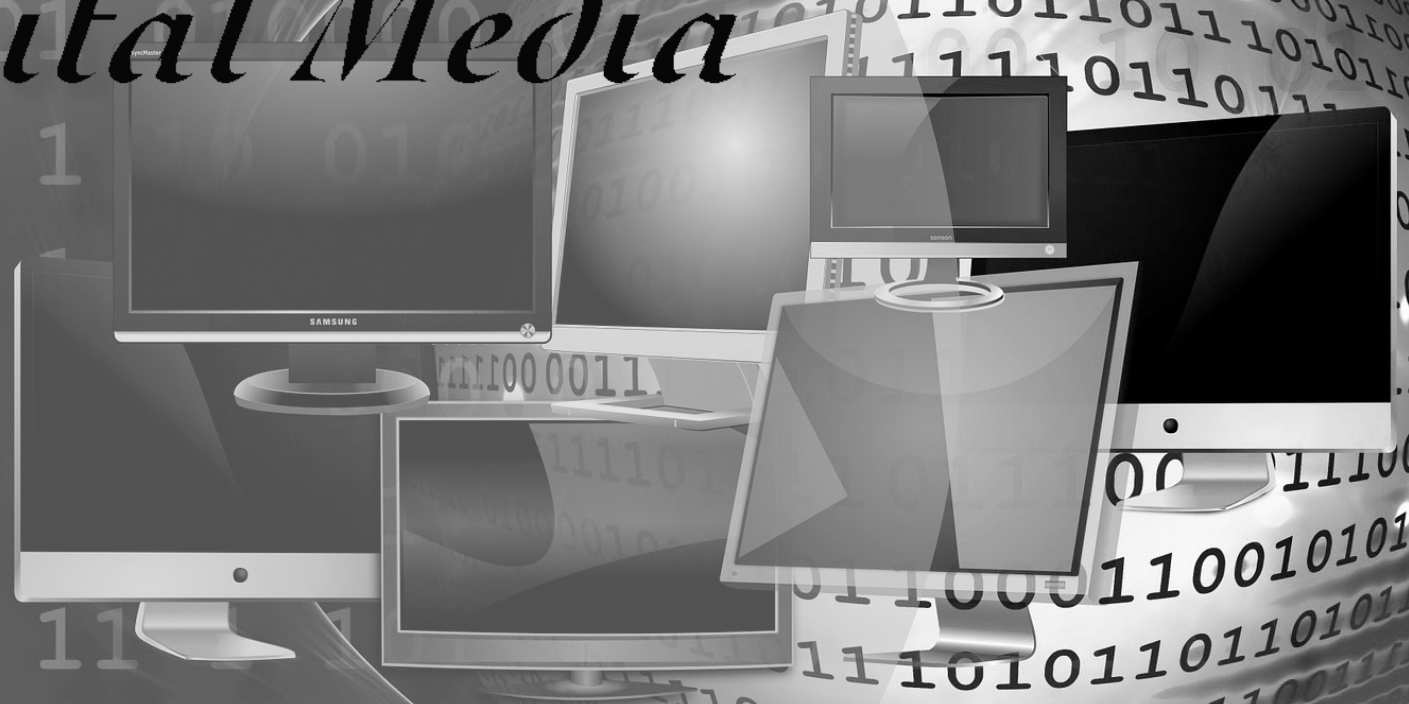
ExplorNet's

Digital Media



Objective 205.02
Select and utilize tools for digital audio production.

MICROPHONES

- There are different types of microphones that have particular characteristics and produce different results.
  - Condenser
  - Dynamic
  - Lavaliere
  - Shotgun

CONDENSER MICROPHONE

- Requires an outside power source (phantom power).
- Results in a high quality signal production.
- Commonly used to capture a person's voice or a musical instrument in a studio.

DYNAMIC MICROPHONE

- Does not require an outside power source.
- Audio signal strengthened by an audio board or other amplifier.
- Commonly used to capture audio during live production.
- Durable microphone.

LAVALIERE MICROPHONE

- Typically attached to the necktie or shirt of the user.
- Used by performers on television or stage because their small size makes it easy to hide.
- Produce a relatively good sound quality.

SHOTGUN MICROPHONE

- Usually long and skinny in appearance.
- Best for recording from a distance.
- Commonly found on high-end video cameras for capturing sound from the recording.
- Also referred to as a “boom” microphone.

QUESTIONS TO CONSIDER

- Why is it beneficial to have different types of microphones?
- If you were going to buy a microphone, what would you buy?
- Do you think there is a universal microphone that could be used during any situation?

AUDIO CABLES

- Certain cable types are needed to connect all of the equipment correctly.
  - USB Cables
  - XLR Cables
  - Mini Cables
  - ¼" (Phono) Cables

USB CABLES

- An advantage to USB (3.0, 2.0, and 1.1) is that there are many interfaces designed to run on USB bus power (rather than an external power supply).
- Works well for mobile recording with your laptop.

XLR CABLES

- The best audio quality, making it common in the professional industry.
- Has a push-button locking system that keeps it from easily being unplugged.
- Very commonly used for microphones.

MINI CABLES

- Found on virtually every consumer audio device.
- Relatively poor audio quality.
- Number of rings around the plug indicate if cable is mono (one ring) or stereo (two rings).

¼" (PHONOS) CABLES

- Widely used to connect speakers, amplifiers, and guitars.
- Similar to mini plug with the rings indicating the number of channels.
- Better audio quality when compared to the mini.

MICROPHONE PICKUP PATTERNS

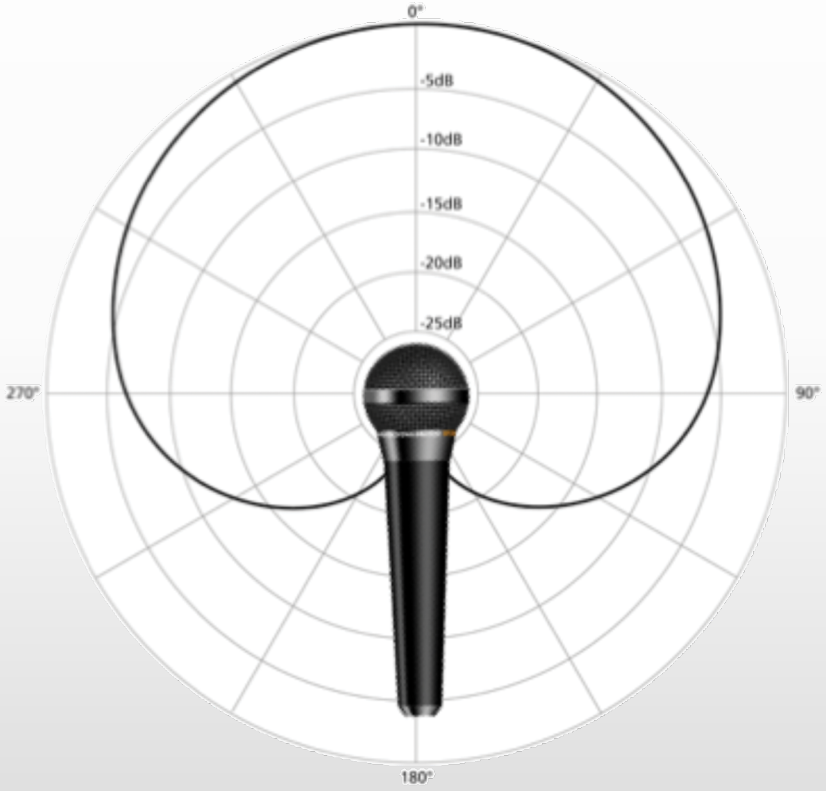
- Depending on the type of recording that is desired and the location of the performers, different microphone pickup patterns record the sound in varying methods.

OMNIDIRECTIONAL PICKUP PATTERN

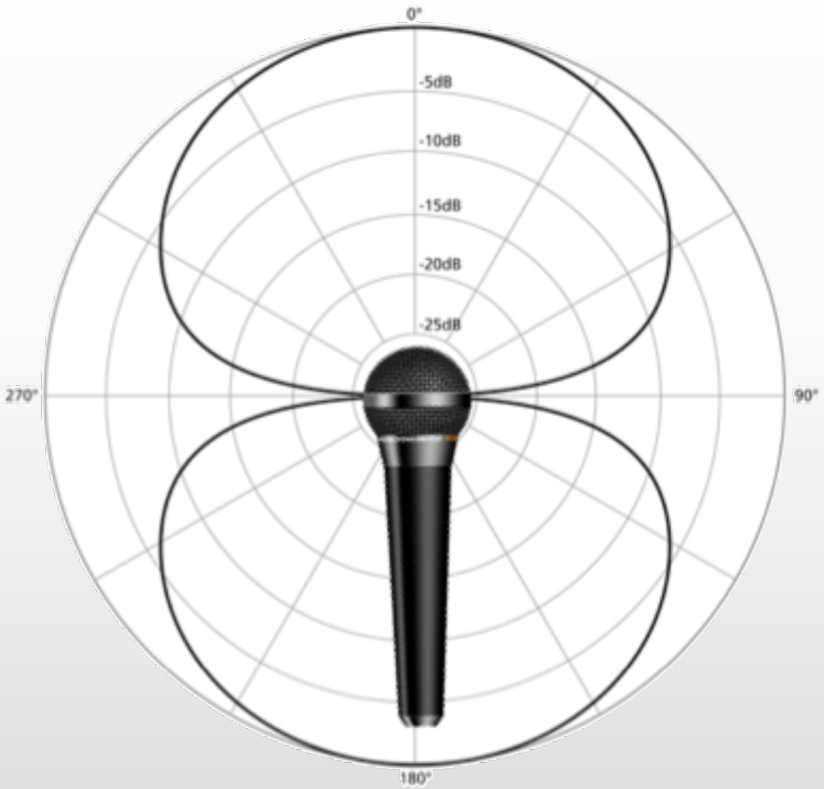
- Captures sound from all directions.
- Useful for capturing sound from all parts of a room.
- Commonly found on consumer video cameras.

CARDIOID PICKUP PATTERN

- Heart-shaped.
- Audio sources in the front of the microphone and very close to the sides are captured.
- Very little sound is picked up from behind the microphone.



BI-DIRECTIONAL PICKUP PATTERN



- Captures sound from in front of the microphone and behind it.
- Very little sound is picked up from the sides.
- Good microphone to use when recording a two-person conversation.

SHOTGUN PICKUP PATTERN

- Captures sound from a pointed direction in a narrow range.
- Useful for recording sound from long distances (during video shoots, in stadiums, recording wildlife, etc.).
- Very little sound is picked up from the sides or behind the microphone.

SETUP MICROPHONE & CABLES

- Setup the microphone and use the appropriate cables to connect to a recording device
- Monitor the levels of the audio while the recording is taking place.
  - Watch the V.U. meter to make sure the audio is at the appropriate level throughout the entire recording.
  - Adjust the volume of the recording to keep the signal from clipping (producing a signal that is too loud for the amplifier to handle).

QUESTIONS TO CONSIDER

- Different pickup patterns are used based on the condition. Can you think of some examples when you might use a:
  - Shotgun pattern
  - Bi-directional pattern
  - Cardioid pattern
  - Omnidirectional pattern

SCRUBBING

- Clicking and dragging the playhead of an audio project through the timeline to get to a particular section.
- The user is able to hear the audio while scrubbing, making navigation of the project more efficient.

ADVANCED AUDIO EDITING TERMS

Ducking

- An editing feature that lowers the volume of a particular track when another audio source is present.
- Commonly used for voiceovers with background music.

Equalization

- The process of adjusting the different levels (bass, treble, mid-tones, etc.) in an audio recording in order to produce the best sound.

ADVANCED AUDIO EDITING TERMS

Audio Gain

- Adding gain to audio will increase the level of the output signal using power from an amplifier; increases the voltage output of the signal.

Normalization

- The process of making sure all of the audio levels in a project are at a consistent level and sound good together.