Drama 292 - Sound Class 3 Lesson Plan

Date: September 10th, 2024
Time: 9:00 AM - 11:50 AM
Duration: 2 hours and 50 minutes (includes a 15-minute break)

9:00 AM - 9:10 AM: Introduction and Recap

- **Objective:** Provide a brief overview of previous classes and introduce today's topics.
- **Activity:**
    - Notify students that assignment 2 sheet is in the e-class.
    - Also notify students that assignment 3 (Invisible Mixing) is in the e-class. They are to listen to the 5 examples provided and select a scene that they would like to mix for assignment 3.
    - Quick recap of key concepts from previous classes.
    - Introduction to the day's focus on EQ and dynamics.

9:10 AM - 10:00 AM: Understanding Equalization (EQ)

- **Objective:** Learn about channel EQ, practical techniques, and common issues.

<u>Lecture and Demonstration</u>

Introduction to EQ:

- EQ is used to adjust the balance of different frequency components within an audio signal.
- **Types of EQ:**
    - **High Pass Filter (HPF):** Removes low-frequency content.
    - **Low Pass Filter (LPF):** Removes high-frequency content.
    - **Parametric EQ:** Allows for detailed adjustment of specific frequency bands.

Setting Up EQ:

- **Step 1:** Open X32 Edit and navigate to the EQ tab for a selected channel.
- **Step 2:** Engage the EQ and adjust the HPF as needed.
- **Step 3:** Use parametric EQ to adjust specific frequency bands.
    - Select the frequency, gain, and bandwidth (Q factor) for each band.

Practical Example:

- Let's adjust the EQ for a vocal channel.
- **Step 1:** Open X32 Edit and select the vocal channel.
- **Step 2:** Engage the EQ and set the HPF to remove low rumble.
- **Step 3:** Use the parametric EQ to boost presence frequencies around 3kHz and cut any harsh frequencies.

EQ for Wireless Lavaliers (Omnidirectional Microphones) in Musical Theatre:

- **General Approach:**
    - **High Pass Filter:** Engage the HPF to remove low-frequency rumble and handling noise, typically setting it around 80-100 Hz.
    - **Mid-Range Adjustment:** Boost mid-range frequencies (2-4 kHz) to enhance clarity and intelligibility of speech.
    - **High-Frequency Roll-Off:** Apply a slight roll-off to high frequencies above 10 kHz to reduce sibilance.
    - **Feedback Control:** Identify and notch out problematic frequencies that may cause feedback in the theatre environment.

Common Issues and Troubleshooting:

- **Issue:** Muffled sound.
    - **Solution:** Increase the HPF frequency and check mid-range EQ settings.
- **Issue:** Harsh or piercing sound.
    - **Solution:** Identify and reduce problem frequencies using parametric EQ.

Q&A Session:

- **Question:** How do I determine the right frequencies to adjust?
- **Answer:** Use your ears to identify problematic frequencies, and utilize spectrum analyzers if available. Practise, Practise, Practise.

10:00 AM - 10:50 AM: Understanding Dynamics (Compression and Gates)

- **Objective:** Learn about compression, gates, limiters, setup, and adjustment.

<u>Lecture and Demonstration</u>

Introduction to Dynamics:

- Dynamics processors control the volume range of audio signals.
- **Types of Dynamics Processors:**
    - **Compressor:** Reduces the dynamic range by lowering the volume of loud signals.
    - **Gate:** Mutes audio signals below a certain threshold.
    - **Limiter:** Prevents audio signals from exceeding a specified level.

Setting Up Compression:

- **Step 1:** Open X32 Edit and navigate to the Dynamics tab for a selected channel.
- **Step 2:** Engage the compressor and set the threshold, ratio, attack, and release.
- **Step 3:** Adjust the make-up gain to compensate for the reduced volume.

Setting Up Gates:

- **Step 1:** Open X32 Edit and navigate to the Dynamics tab for a selected channel.
- **Step 2:** Engage the gate and set the threshold, attack, hold, and release.
- **Step 3:** Adjust the range to determine how much the signal is attenuated when gated.

Practical Example:

- Let's set up compression and gating for a vocal channel.
- **Step 1:** Open X32 Edit and select the vocal channel.
- **Step 2:** Engage the compressor, set the threshold to -20dB, ratio to 3:1, attack to 15ms, and release to 100ms.
- **Step 3:** Engage the gate, set the threshold to -40dB, attack to 10ms, hold to 100ms, and release to 150ms.

Dynamics for Wireless Lavaliers (Omnidirectional Microphones) in Musical Theatre:

- **General Approach:**
    - **Compression:** Use gentle compression with a low ratio (e.g., 2:1 to 4:1) to control dynamic range without sounding unnatural. Set the threshold just below the average speech level, with a medium attack (20-30ms) and release (100-200ms).
    - **Gating:** Use a gate sparingly to avoid cutting off natural reverb and room ambience. Set the threshold low enough to avoid gating during quiet speech, with a fast attack and medium release.

Common Issues and Troubleshooting:

- **Issue:** Over-compressed sound.
    - **Solution:** Increase the threshold or reduce the ratio.
- **Issue:** Gate cutting off audio too early.
    - **Solution:** Adjust the release time to allow for a smoother decay.

Q&A Session:

- **Question:** How do I avoid over-compressing my audio?
- **Answer:** Use gentle settings and listen critically to maintain the natural dynamics of the performance.

10:50 AM - 11:05 AM: Coffee Break

11:05 AM - 11:35 AM: Practical Applications and Common Scenarios

- **Objective:** Apply knowledge of EQ and dynamics in practical scenarios.

Lecture and Demonstration

Common Mixing Scenarios:

- **Scenario 1:** EQ and compression for vocals in a live performance.
    - Use HPF to remove low-end rumble.
    - Apply gentle compression to control dynamics.
- **Scenario 2:** Gating for drum kits.
    - Use gates to reduce bleed from other drums.
    - Apply compression to add punch to the kick and snare.

Optimizing EQ and Dynamics:

- **Tip:** Use subtractive EQ to remove unwanted frequencies before boosting desired ones.
- **Tip:** Apply compression in stages if needed, using multiple compressors with gentle settings.

Q&A Session:

- **Question:** How do I balance multiple EQ and dynamics processors in a mix?
- **Answer:** Prioritize the most critical adjustments and make incremental changes, listening to the overall mix.

Extended Discussion:

- **Encourage students to share their own mixing challenges and solutions.
- **Discuss the importance of flexibility and adaptation in different mixing environments.

11:35 AM - 11:45 AM: Recap and Assignment Reminder

- **Objective:** Summarize key points from the lesson and remind students about their assignments.

Recap:

- Review the main concepts covered: EQ, compression, gates, and practical applications.

- Emphasize the importance of using EQ and dynamics effectively in various scenarios.

Assignment Reminder:

- Remind students about Assignment #2 and its due date.
- Encourage students to apply the techniques learned today in their board files.

11:45 AM - 11:50 AM: Hands-On Practice

- **Objective:** Provide students with practical experience applying EQ and dynamics.
- **Activity:**
    - Students work on their laptops using X32 Edit to apply EQ and dynamics to sample audio tracks.
    - Individual guidance and support from instructors.

Guidance and Support:

- Instructors circulate to provide individual assistance and answer questions.
- Ensure students follow proper procedures for applying EQ and dynamics.

Materials Needed:

- X32 Edit software
- Laptops for each student

Assessment:

- **Participation:** Monitor student engagement during lectures and discussions.
- **Understanding:** Evaluate the students' comprehension through Q&A sessions and practical exercises.

Notes:

- Emphasize the importance of understanding both software (X32 Edit) and practical applications in real-world scenarios.
- Encourage students to take detailed notes and ask questions.
- Use this session to identify any areas where students may need additional support or review in future classes.

This lesson plan ensures that students get a comprehensive understanding of EQ and dynamics, with a focus on practical application and real-world scenarios, including specific approaches for wireless cavaliers in musical theatre.