

MicTest Studio: ADDIE Project Documentation

Project Name: MicTest Studio: Auditory Diagnostic Tool

Project Goal: Increase user recording effectiveness by an average of **20%** per session, resulting in an estimated savings of **15 minutes of post-editing time** per recorded hour.

1. Analyze (The Problem Justification)

This phase confirms the significant cost associated with preventable technical failures in user-generated audio.

Problem Statement

Beginner and novice podcasters struggle to achieve professional-quality raw audio due to a lack of foundational knowledge in **gain staging** and **environmental control**. This reliance on default software settings leads to two costly, unfixable flaws:

1. **Digital Clipping:** Caused by poor physical gain management.
2. **Excessive Noise:** Resulting in a poor **Signal-to-Noise Ratio (SNR)**.

Target Audience Profile	Initial Metric Targets
Novice Creators (Low Technical Proficiency)	SNR \geq 25 dB (Voice is 25 dB louder than noise)
High Motivation (To save time/money)	Average RMS between -18 dBFS and -12 dBFS (The professional sweet spot)
Primary Barrier: Confusion over hidden OS settings (e.g., Windows throttling).	Max Peak \leq -3 dBFS (Required headroom)

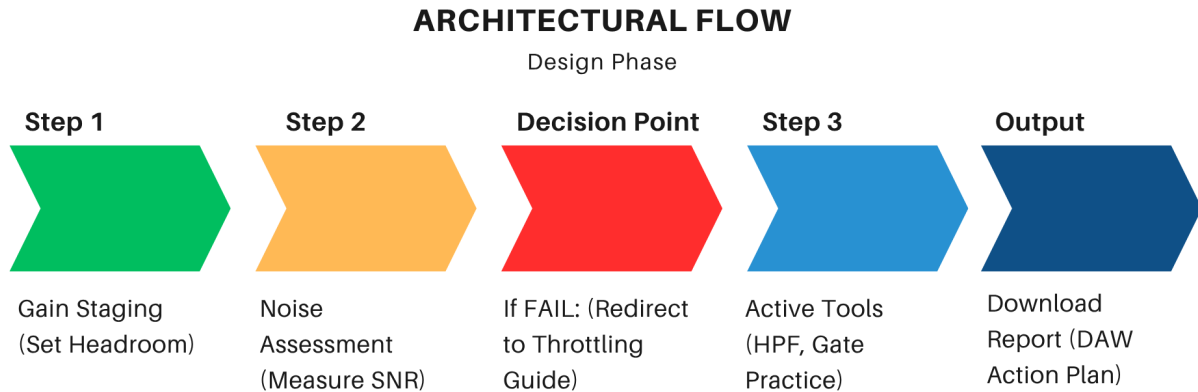
2. Design (The Instructional Blueprint)

The solution is an integrated web application that forces the user to solve critical foundational problems before moving to complex techniques.

Core Instructional Strategy

Design Element	Rationale
Sequential Flow & Gating	The system enforces a linear progression (Gain→ Noise→ Technique), preventing the user from addressing advanced flaws before fixing the fundamental issue of Headroom .
Tiered, Range-Based Scoring	The score is based on a weighted deduction system (not binary Pass/Fail). This measures incremental improvement , ensuring the user gets partial credit for reducing a flaw (e.g., a -10 point penalty instead of a full -25 point failure), keeping them motivated.
Active Tools	The interface includes tools like HPF, Noise Gate, and Compressor that the user is instructed to use <i>after</i> diagnosis. This allows them to immediately practice the recommended fix and see the measurable result on the meter.
Final Deliverable	The application produces a DAW Action Plan (The Cheat Sheet) tailored to the user's software choice (Audacity, Pro Tools, etc.), providing platform-specific, immediate value.

Architectural Flow Diagram (Process and Scoring)



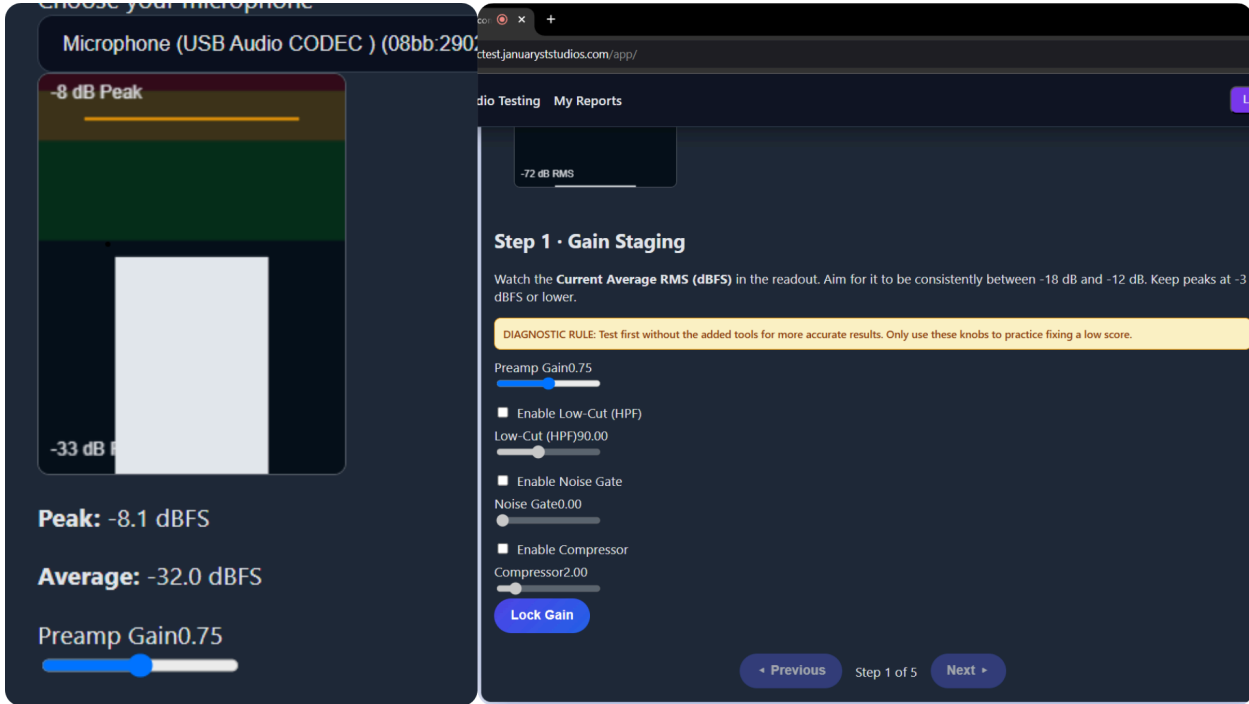
3. Development (Execution and Tooling)

This phase delivered the functional application and the required external guides to resolve critical OS conflicts.

Feature Area	Key Implementation	Instructional Value
System Check Bypass	External System Throttling Guide (mmsys.cpl fix) added to address the common Windows 11 AGC throttling conflict.	Solves the primary cause of low average volume (the -24.7 dBFS reading) and is accessible via a link on the report page.
DSP Implementation	Web Audio API controls for Gain, HPF, and Dynamics were wired into the signal chain, allowing users to practice advanced effects in real-time.	Provides users with a clear visual demonstration of how a 90Hz HPF eliminates plosives.

<p>Security & Data</p>	<p>Supabase Auth Trigger implemented to automatically assign the 'student' role upon sign-up, ensuring the application is stable, secure, and ready for analytics.</p>	<p>Guarantees all data is tied to a user ID, enabling the Evaluation phase.</p>
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Live Interface Visualization (Example of Gain Staging)



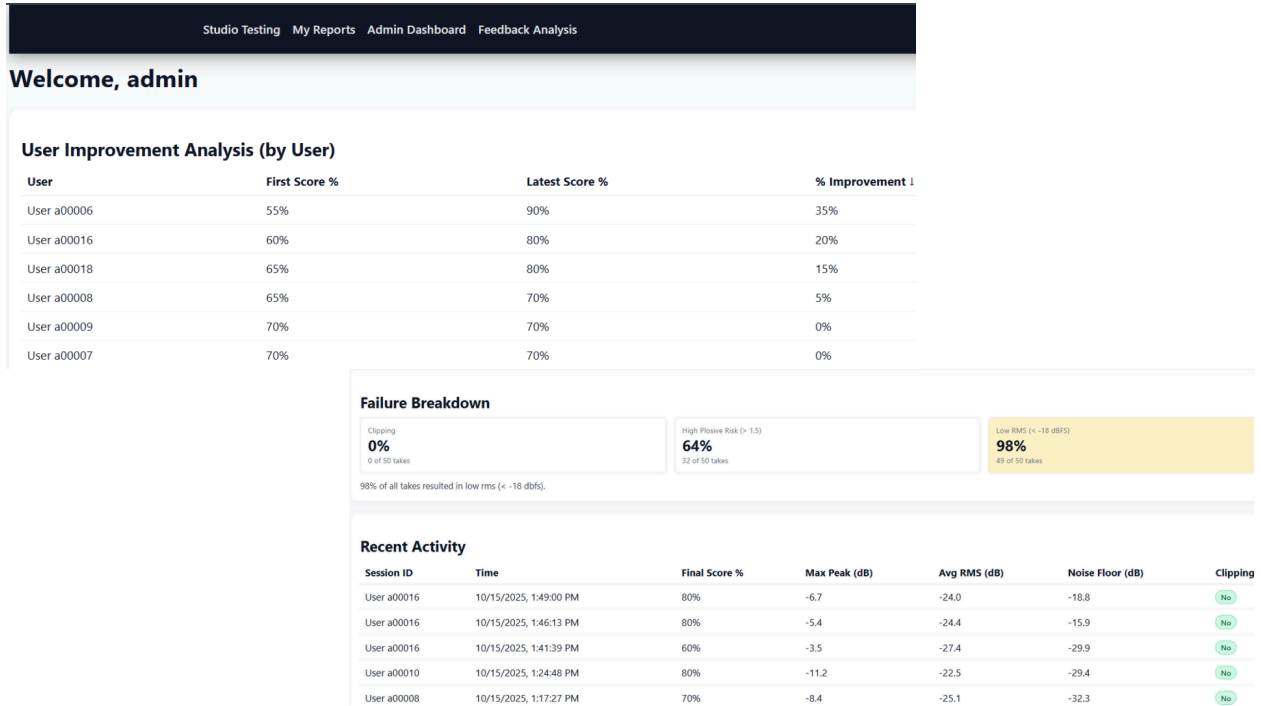
4. Implementation (Launch and Support)

This phase focused on deployment stability and operational support for end-users and the support team.

- **Final Launch Target:** The application was deployed to the stable, external subdomain <https://mictest.januarystudios.com> (using the dedicated Vercel project) to prevent routing conflicts and provide a professional domain.
- **Articulate Integration:** The final application link is embedded in the Articulate Rise 360 course structure, which acts as the official course delivery shell.
- **Operational Handover:** Documentation for the **Common User Failures Matrix** was created, detailing the support action required for issues like **Persistent Low RMS** (redirect to the System Throttling Guide).

5. Evaluation (Measuring Training Success)

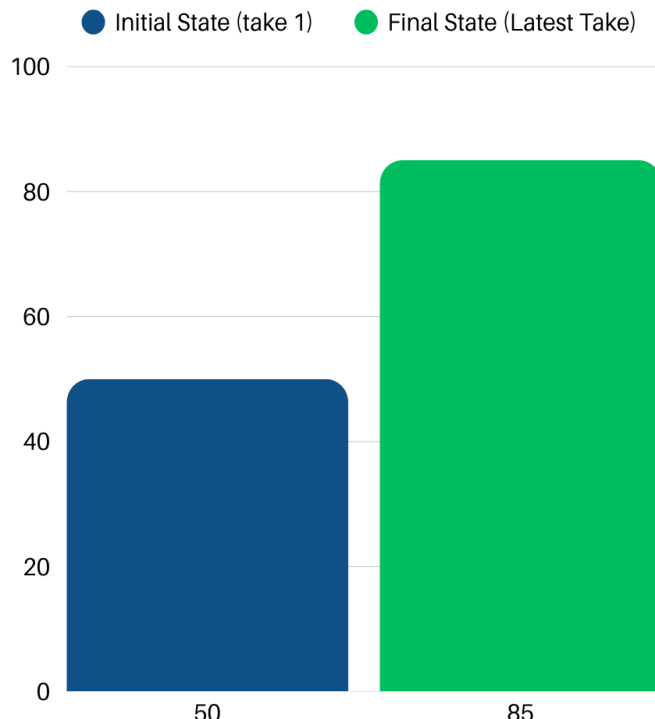
The final phase uses the **Admin Dashboard** data to answer the core question: Did the instructional module drive the required change in user behavior?



Key Behavioral Change Metrics

Evaluation Metric	Goal Measurement
Average Score Improvement	Calculate the average percentage difference between a user's First Take Score and their Latest Take Score .
Critical Failure Trend	Track the percentage decrease in the unfixable errors (Clipping > -3 dBFS) from the 1st attempt to the 3rd attempt.

Average Score Improvement Graph (Proof of Behavioral Change)



35% Average Score Improvement.

Failure Trend Chart (Proof of Risk Mitigation)

