Technical Ear Training platform (TETp) Manual

Audio-based ear-training and listening assessment platform

Teacher & Student Guides
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Teacher Guide

Purpose and Scope

TETp provides instructors with a clear, structured system for creating, delivering, and assessing comparison-based audio ear-training activities. Originally developed for critical listening in audio engineering education, the platform could be adapted for other purpose-built instructional audio.

The system is intentionally focused on **listening** only. Students do not edit audio or perform technical manipulations. Instead, they complete structured tasks that emphasize careful comparison and accurate identification based on auditory perception.

The **Teacher Guide** describes all features of the **Teacher Dashboard**. A separate guide covers the **Student Dashboard** experience.

Teacher Dashboard Overview

After signing in, instructors arrive at the **Teacher Dashboard**, the central workspace for all instructional setup. The top navigation menu provides access to the following sections:

1. Students – manage learner accounts
2. Groups – organize students into classes or sections
3. Audio Objects – create and manage listening materials
4. Assignments – create and manage listening activities
5. Gradebook – review quiz results
6. Change Password
7. Help Manual
8. Logout

Each section reflects a core step in configuring and delivering listening activities. By default, the **Students** tab is selected at sign-in and displays all student accounts.

1. Students: Enrollment and Access

The Students section lists all learners registered under the instructor's account. Students can complete practice and quiz assignments, and change their personal password. They do not have permission to create audio objects, create or edit assignments, or modify system settings.

1.1 Creating a Student

1. Navigate to the **Students** tab.
2. Select **Create Student**.
3. Enter the following information:
   a. Student UID (institution or program identifier)
   b. Email address
   c. First name
   d. Last name
   e. Group (optional)
1. Select **Create Student**.
2. The student account appears immediately and is added to any assigned groups.

1.2 Temporary Passwords

When a student is created, their temporary password is set to their **last name, case-sensitive**. If the last name is less than 6 characters, 0's are added to the end of the last name until there are six characters (Example temporary password: Short0). Students should change this password upon first login.

1.3 Editing or Deleting Students

1. In the Students table, in the **Actions** column, use **Edit** to change student information.
2. Use **Delete** to permanently remove a student, including all group associations and quiz grade data.

2. Groups: Creating and Managing Classes

Groups represent classes, sections, or cohorts. Assignments are always delivered to groups rather than individual students, so groups should be created before assigning listening activities.

2.1 Creating a Group

1. Navigate to the **Groups** tab.
2. Select **Create Group**.
3. Enter the following information:
   a. Group name
   b. Semester (optional)
   c. Course code (optional)
   d. Description (optional)
1. Select **Create Group**.
2. The group appears in the **Groups You Created** list.

2.2 Editing or Deleting Groups

1. In the Groups table, use **Edit** to update group details.
2. Use **Delete** to permanently remove the group and all associated assignment links.

*Note: To add students to a group, edit the students in the **Students** tab.*

3. Audio Objects: Core Listening Materials

An **Audio Object** is the core listening unit used in TETp. Each audio object represents a single controlled comparison, often designed to train or test a specific listening skill. Audio objects may involve comparisons of processing such as equalization, dynamics, reverb, volume, automation, or other intentional signal modifications. They may target individual instruments, full mixes, or synthetic signals such as noise and tones.

3.1 Creating an Audio Object

1. Navigate to **Audio Objects**.
2. Select **Create Audio Object**.
3. Enter the following information:
   a. Name
   b. Processing type (e.g., Equalization, Compression)
   c. Target instrument (e.g., Full Mix, Vocal, Snare)
   d. Artist
   e. Song
   f. Link (optional)

g. Visibility (Public or Private)

1. Upload the audio files using **Choose File** and provide a **Description** of the processing that is applied to the file that will be displayed to students.
2. Select **Create Audio Object**.
3. The audio object appears in the **Audio Objects You Created** table.

Note: When Audio Objects are set to "public", they are visible and usable by all instructors on the platform.

3.2 Student Listening Experience

Within practice or quiz assignments, students are presented with a sequence of Audio Objects. Each Audio Object represents one "trial" or "question" in the assignment. Each Audio Object is presented with one reference audio and multiple comparison options. The reference audio is randomly selected from the pool of comparison options. The student can listen to each option and the reference. Students may listen and compare as many times as allowed by the assignment settings before selecting the option they judge to be identical to the reference.

3.3 Public Audio Objects

Public audio objects are shared instructional materials created by other instructors. These objects are read-only and may be added to assignments you create.

4. Assignments: Practice and Assessment Design

Assignments bundle one or more audio objects and define how students interact with them. Assignment settings determine the task type, practice or quiz mode, assigned groups, number of questions, and timing behaviour.

4.1 Creating an Assignment

1. Navigate to **Assignments → Create Assignment**.
2. Configure the assignment by setting:
   a. Assignment name
   b. Task type (see Section 4.2)
   c. Assignment type (Practice or Quiz)
   d. Associated audio objects

e. Assigned groups
f. Number of questions
g. Time limits (per question, if enabled)

4.2 Task Types

TETp supports three task types, selected by the instructor based on the learning goal. Often, the task types are considered to increase task difficulty.

1. **Matching**
   a. Students compare options against a continuously available reference.
2. **Matching Memory**
   a. The reference audio plays once and is then unavailable.
   b. Students rely on auditory memory to choose the correct option.
3. **Absolute Identification**
   a. Students hear only the reference audio.
   b. Audio options cannot be auditioned.
   c. Identification is based on processing description alone.

4.3 Practice vs. Quiz Assignments

Practice assignments are designed to support learning and exploration. They provide immediate feedback, allow multiple attempts, and do not appear in the Gradebook.

Quiz assignments are typically used for assessment. They allow one attempt and are recorded in the **Gradebook**.

4.4 Assignment Logic and Listening Flow

For each question, the system randomly selects an audio object from the pool of associated audio objects. Within the object, a reference file is randomly selected from the pool of audio files. Students compare all audio files to the reference file and submit one answer. If the answer is incorrect, feedback is displayed, the correct answer is shown, and the student may continue listening after submission before proceeding to the next question.

Example: EQ Training

Reference: Kick drum processed with an undisclosed EQ setting (+12 dB at 500 Hz, Q = 2).
Options:

1. Option 1: Bypass
2. Option 2: +12 dB at 63 Hz, Q = 2
3. Option 3: +12 dB at 125 Hz, Q = 2
4. Option 4: +12 dB at 500 Hz, Q = 2 (correct answer)
5. Option 5: +12 dB at 1 kHz, Q = 2
6. Option 6: +12 dB at 2 kHz, Q = 2
7. Option 7: +12 dB at 4 kHz, Q = 2
8. Option 8: +12 dB at 8 kHz, Q = 2
9. Option 9: +12 dB at 16 kHz, Q = 2

5. Gradebook and Assessment

The Gradebook records quiz results only. Data includes completion status and the percentage of correct responses.

6. Editing, Updating, and Deleting Content

1. Use **Edit** to update audio objects, assignments, or groups.
2. Use **Delete** to permanently remove content.
3. Changes may affect in-progress or completed student work, and deleted content cannot be recovered.

7. Change Password

Instructors can update their password using the **Change Password** option in the navigation menu.

Technical Notes

Audio playback uses uncompressed PCM audio. Slower network connections may increase loading times at the beginning of each question/trial. Supported browsers include the latest versions of Google Chrome.

Student Guide

Purpose and Scope

The TETp Student Dashboard provides learners with a focused, intuitive environment for completing comparison-based audio ear-training activities. While originally developed for critical listening in audio engineering education, the platform can support a wide range of listening tasks using musical material, synthetic signals, and other instructional audio.

The system is intentionally focused on **listening** only. Students do not edit audio or perform technical manipulation. Instead, they complete structured listening tasks that require careful comparison and identification based on what they hear.

This manual explains how to navigate the **Student Dashboard**, start assignments, use listening controls, and view results.

Student Dashboard Overview

After signing in, learners arrive at the **Student Dashboard**, the main hub for completing listening activities. The interface is intentionally minimal to support focused listening.

From the dashboard, students can:

1. View assignments – see all available tasks
2. Start assignments – launch practice or quiz activities
3. Change Password – update their login password (recommended after first sign-in)

Assignments are displayed as a list showing the assignment name, assignment type (Practice or Quiz), number of questions, and time limit (if applicable).

1. Assignment Types

TETp assignments are delivered in one of two modes: Practice or Quiz. The mode is selected by the instructor based on the learning objective.

1.1 Practice Assignments

Practice assignments are designed to support skill development and exploration. They provide feedback after each question, allow multiple attempts, and are not recorded in the instructor's Gradebook.

1.2 Quiz Assignments

Quiz assignments are used for assessment. They typically allow only one attempt, emphasize accuracy, and are recorded in the instructor's Gradebook.

2. Starting an Assignment

To begin an assignment, locate it in the dashboard list and review the displayed details.

1. Confirm the assignment name.
2. Review the task type.
3. Check the number of questions.
4. Review the time limit (if enabled).
5. Select **Start**.

If the assignment is timed, the countdown begins immediately when the assignment interface loads.

2.1 Task Types

Assignments use one of the following interaction models, chosen by the instructor:

1. **Matching**
   a. Compare multiple audio options against a continuously available reference audio.
2. **Matching Memory**
   a. Listen to the reference audio first.
   b. The reference is then hidden.
   c. Select the matching option using auditory memory.
3. **Absolute Identification**
   a. Listen only to the reference audio.
   b. Audio options are not auditioned.
   c. Identify the processing based on its description alone.

3. Assignment Listening Interface

Each question presents a listening task consisting of a reference audio and several answer choices.

Students are provided with:

1. A reference (original) audio example
2. Multiple answer options, each with a different audio example (when applicable)
3. Play controls for each option and the reference
4. A **Submit** and **Next Question** button

3.1 Audio Playback

Students may listen to each example as many times as needed unless restricted by assignment timing rules.

1. Each option is played by clicking on its button.
2. Click the reference audio button to play it. It is automatically selected when the question loads.

3.2 Keyboard Shortcuts

For faster comparison and improved listening flow, students may use the following shortcuts:

1. **Number keys (1–9):** Play corresponding audio options
2. **R**: Play the reference audio

Using keyboard shortcuts reduces mouse interaction and helps maintain focus on listening.

3.3 Selecting and Submitting an Answer

To submit an answer:

1. Listen to the reference audio.
2. Listen to each option as needed.
3. Select the option that best matches the task prompt.

4. Select **Submit**..

Once an answer is submitted, it cannot be changed. However, you can continue comparing the multiple options by clicking on them.

5. When you are finished, click **Next Question** to move to the next comparison.

Example: EQ Training

Reference: Kick drum processed with an undisclosed EQ setting (+12 dB at 500 Hz, Q = 2).
Options:

1. Option 1: Bypass
2. Option 2: +12 dB at 63 Hz, Q = 2
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9. Option 9: +12 dB at 16 kHz, Q = 2

4. Assignment Progress and Completion

Assignments advance one question at a time. The interface displays the current question number, total questions, and a progress indicator.

After completing the final question in an Assignment, the assignment will automatically close.

6. Technical Recommendations

For the best listening experience:

1. Use high-quality headphones or loudspeakers.
2. Maintain a consistent and comfortable listening level.

3. Use a modern version of Google Chrome.
4. Close other browser tabs that may interfere with audio playback.
5. Ensure a fast and stable internet connection. If load times at the beginning of each question are long, the internet connection is likely the issue.

No software installation is required; the platform runs entirely in a web browser.

7. Change Password

Students can update their password using the **Change Password** option in the dashboard menu.