

# Heuristic Evaluation: PickupPiano

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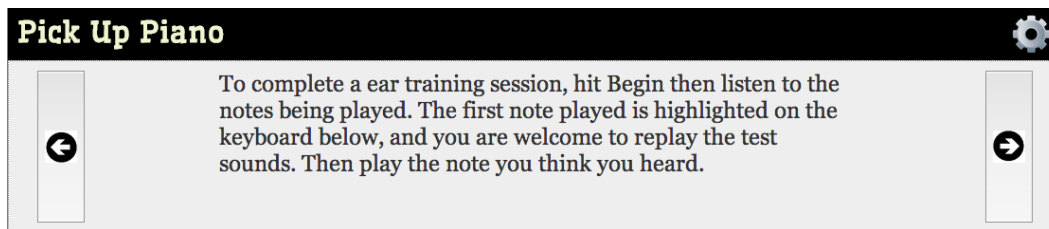
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## 1 Menus and Navigation

Users navigate through activity instructions which appear at the top of the screen and change the activity settings through a menu that drops down from the top navigation bar. The instructions are easy to navigate through but have some readability problems; the settings menu gives the user important controls but has several issues associated with learnability, safety, and aesthetics.

### 1. Instructions - Minor Problem: Aesthetic

The current instructions that begin with “To complete a ear training session” are laid out in one long paragraph that is difficult to read as is illustrated in Figure 1. It would be helpful to segment these into bullet points or a numbered list. Separately, the grammar in these instructions should be cleaned up to make the sentences more readable; using commas and punctuation appropriately will give the instructions a more professional feel.



**Figure 1:** This long paragraph of instructions should be laid out in a fashion that is easier to read.

### 2. Settings - Major Problem: Learnability

The difficulty settings for the ear training exercises are hidden within the settings box. Users will never discover the more advanced exercises on their own unless they have the presence of mind to go to the settings box. It would be helpful if the difficulty setting was more visible; many other applications in which users are learning a new skill will use some type of progress bar or other indicator to show the user how much he or she has completed and what other challenges await them further on in their journey.

### 3. Settings - Major Problem: Safety

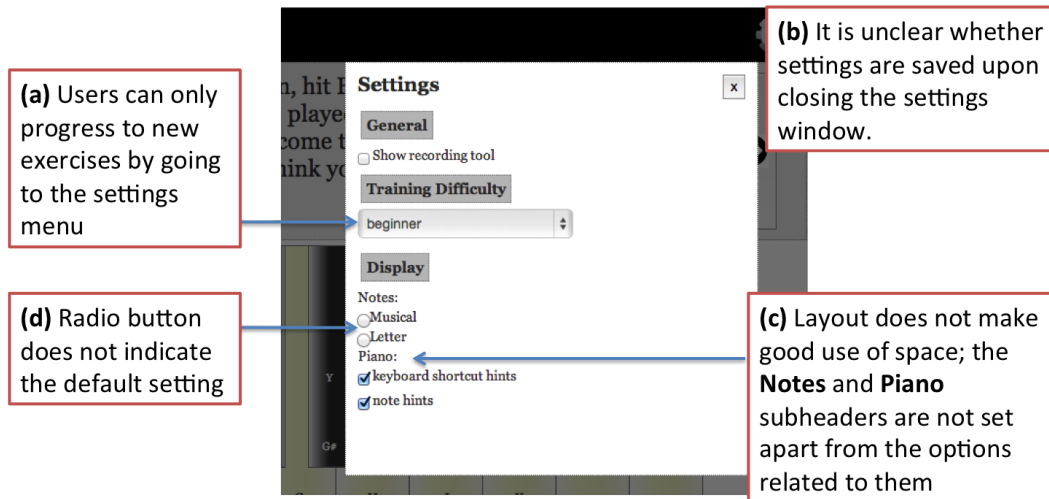
It is not clear when the user’s changes would go into effect. The settings box is grayed out, and there is no “Save Settings” button. As such, it is not clear when the settings will be applied.

### 4. Settings - Minor Problem: Aesthetic

The alignment of labels to radio boxes and checkboxes is not correct in the system settings box; moreover, the “piano” and “notes” subheadings are not appropriately distinguished from the label text associated with the checkbox and radio options.

### 5. Settings - Minor Problem: Visibility

It is not clear what the default setting is for the display of notes, musical or letters, because no option is selected when the settings box is first opened.



**Figure 2:** Issues with learnability (a), safety (b), aesthetics (c) and visibility (d) are illustrated in this screenshot.

### 6. Navigational Arrows - Cosmetic Problem: Aesthetic

The navigational arrows are icons that appear to be “pasted” onto the gray button background. Furthermore, the navigational buttons are the same color as the background. The buttons should stand out more from the background, and the arrow icons should appear more integrated with the rest of the button.



**Figure 3:** The arrow buttons are not distinguished from the background gray, and the icons are not integrated well with the rest of the button.

## 7. Settings - Good: Consistency

The use of the gear to indicate the settings menu, as shown in Figure 4, is externally consistent with many other applications.



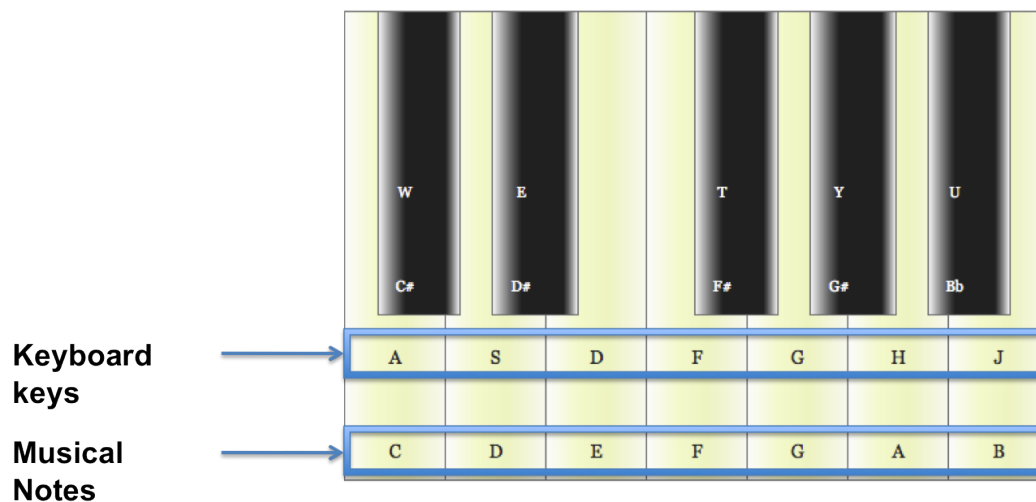
**Figure 4:** The settings icon is ubiquitous across many applications and is used well in the PickUp Piano navigation bar.

## 2 Piano Interface

The piano interface is a fun and intuitive way for users to interact and engage with the ear training process. The challenge with this interface is that users, some of whom are new to music theory, must be very clear about the affordances associated with the keys.

### 8. Keys - Major Problem: Learnability and Anticipation

To users that do not know the notes of the musical scale, it may be unclear whether the top letter or the bottom letter of the key is the musical note; indeed, they may not even know that there are lettered notes in music. Moreover, users may be confused as to why hitting the letter D on their keyboard does not play the letter D, while playing the letter F does play the letter F. I would clarify what each row of letters is supposed to mean (maybe use key-like icons or boxes for the top row of letters on each key). This problem is illustrated in Figure 5.

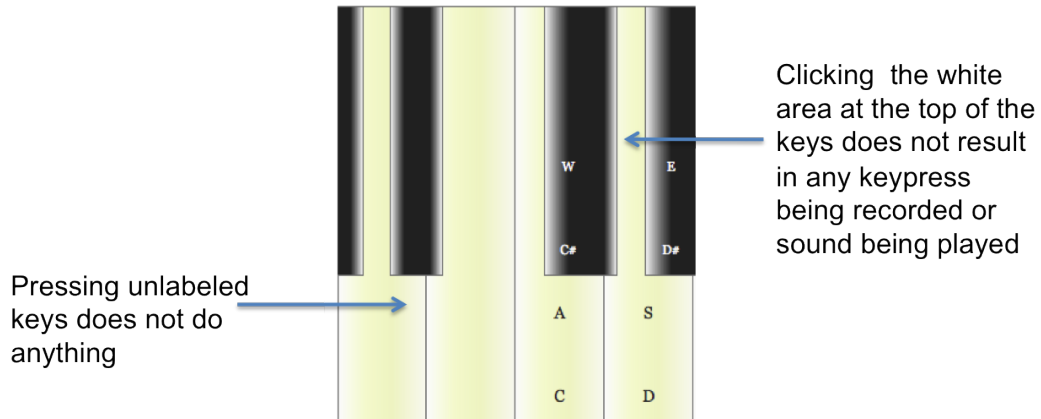


**Figure 5:** The labels do not distinguish between which letters represent musical notes and which letters represent the keyboard keys that should be pressed in order to play the associated note.

### 9. Keys - Minor Problem: Affordances

Users cannot press the top of a white key, and it is not clear from the layout of the piano keys why the user should not be allowed to do so. Relatedly, there are keys not labeled with letters which do

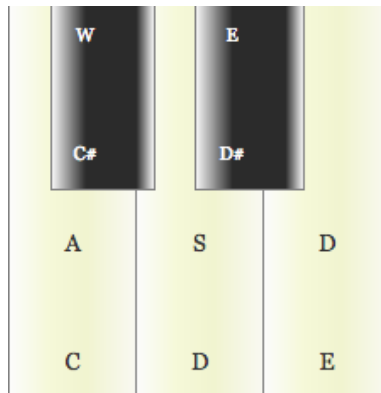
nothing upon mouse clicks. Unless these keys are needed for some particular purpose, it might be best to eliminate them from the interface.



**Figure 6:** Some keys do not behave as expected when using the mouse interface.

### 10. Colors - Cosmetic: Aesthetic

The gradient image styling on the black keys makes it difficult to see some of the white letter note labels, which also appear off center relative to the black keys. This problem is illustrated in Figure 7.

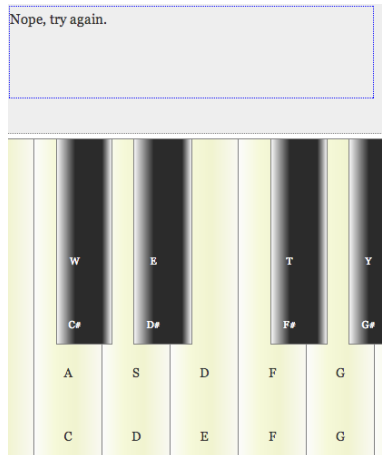


**Figure 7:** The letters on the black keys appear off-center and are too close to the gradient edge where black fades into white.

## 3 Exercises

The piano exercise interface allows users to select a new exercise for ear training. The problems outlined below largely deal with the need for better user feedback within the context of a given exercise and the need for users to be aware of their progress through the different exercises.

### 11. Exercise Status - Major Problem: Safety, Feedback and Visibility

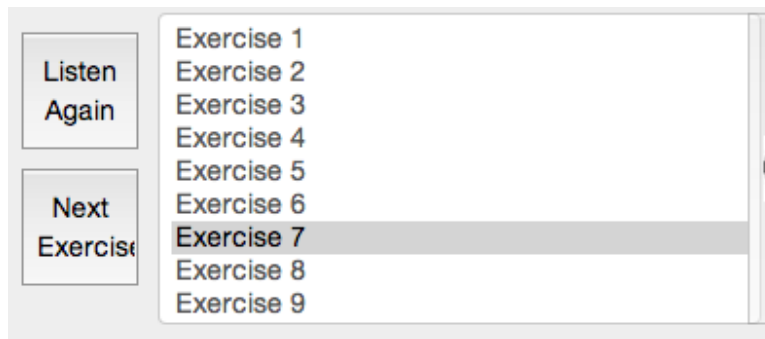


**Figure 8:** After playing the first note of a two-note exercise, the user is told to try again; in reality, the user simply needs to play the second note of the exercise. There is no information displayed within the piano interface that illustrates which keys were recently played or how many more keys should be played.

When the user has started but not yet completed an exercise, the status box tells the user "Nope, try again" until the exercise has been completed. The error message suggests that the system wants the user to start over, but in actuality, the system is simply waiting for the next notes in the sequence to be played. The system does not actually make any judgments on whether the sequence was played correctly until the full sequence has been played.

## 12. Exercise Status - Major Problem: Feedback and Visibility

The user has no way of knowing which exercises he or she has already completed, as is shown in Figure 9. Simple feedback (i.e., a checkmark next to each completed exercise) would be extraordinarily helpful to users.

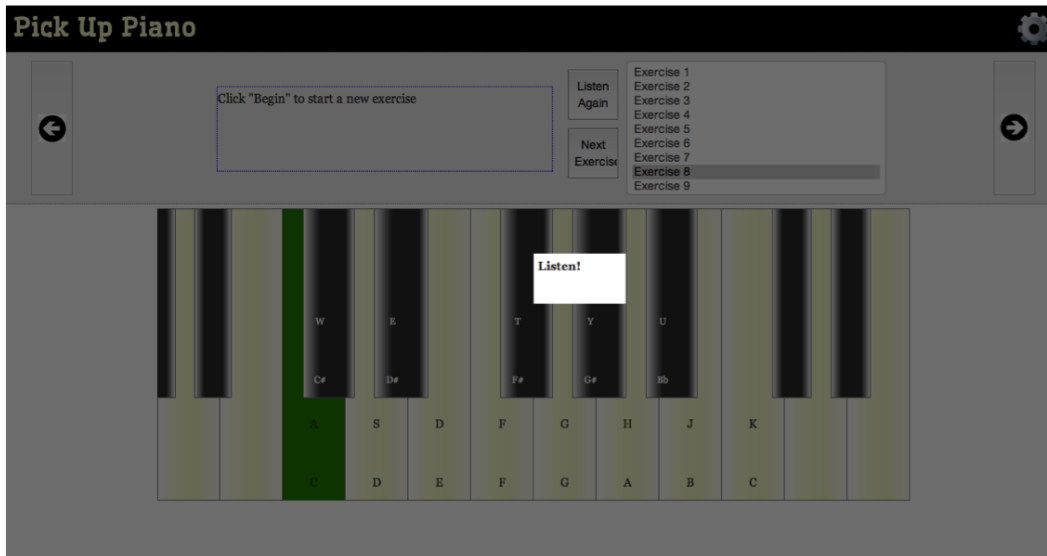


**Figure 9:** There are no indications within the exercise selection box of which exercises have been played already.

## 13. Exercise Flow - Good: Affordances and Consistency

When the user begins an exercise, the piano is grayed out, as is shown in Figure 10 while the user is told to listen; once the window is returned to its normal state (not grayed out), it is clear to the user immediately that he or she should

play back the notes. While the piano is grayed out, the user cannot play the piano; this is consistent with the affordances associated with grayed out items in other web and computer applications.



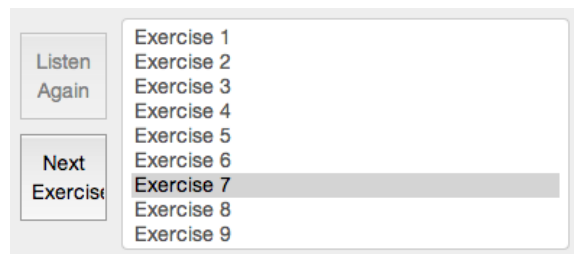
**Figure 10:** Upon beginning the exercise, the window is grayed out while the user listens to the sequence of notes.

#### 14. Navigation - Minor Problem: Efficiency

When the user has completed an exercise, there is no simple way to redo the exercise. The only options are to move to the next exercise. Even though the tool is designed for ear training, it is possible that users might want to use it for practicing the piano as well. Given that users practicing the piano will often want to replay certain exercises multiple times over, this is an efficiency problem that needs to be fixed. This problem is illustrated in Figure 11.

#### 15. Navigation - Major Problem: Affordances and Consistency

The exercise selection menu can sometimes be used to select a new exercise and, at other times, cannot be used to fulfill the same function. After an exercise has been started or completed, the user must first hit “Next exercise” before one is able to use the select menu to pick a new exercise. This problem is illustrated in Figure 11.



**Figure 11:** After an exercise (in this case, exercise 7) is completed, the only way to move out of the exercise is to hit 'Next Exercise'.

## 4 General

### 16. Name of Application - Minor Problem: Anticipation and Consistency

Without reading the instructions, it is not clear to the user that this application is designed for general ear training rather than the general process of learning to play the piano. This is important because some of the design choices that are made, like the lack of a ‘repeat exercise’ button, make more sense in the context of an ear training application than in a general application designed to teach people piano. I think it would be helpful to choose a different name.

### 17. Logo - Good: Aesthetic



**Figure 12:** The logo captures the fact that playing the piano and engaging with the Pick up Piano application should be fun; moreover, the colors match those of black and white piano keys.

The font choice for the logo (Figure 12) is appropriate; it conveys a sense of fun and playfulness.

### 18. Color Scheme - Good: Consistency

The color scheme for the navigation bar is simple and consistent with the dominant colors of the piano interface (the color scheme in the navigation bar is shown in Figure 4).

## 5 Collaboration

I discussed this assignment with Alex Hsu (we were not assigned to evaluate the same website).