

# ANXIETY

IN AIR TRAVEL

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## BACKGROUND

It's no secret that flying and traveling in general is viewed by many as a negative experience. Emotions experienced when flying can range from annoyance to anxiety to panic. "According to some estimates, as many as **25 percent of all Americans suffer some nervousness about flying** but the National Institute of Mental Health says this fear, usually called aviophobia, affects just **6.5 percent of the population**" (Seaney).

## BACKGROUND

During times of anxiety or stress, many people may turn to natural therapies such as exercise. However, in a confined, noisy plane cabin, these treatments are likely either difficult or impossible to accomplish. A solution to this problem could mean a reduction in anxiety for as many as **250 million passengers a year** (United States Department of Transportation).



## TECHNOLOGY

Oculus from Facebook has introduced hand tracking, thus removing even the need for controllers. As these technologies and hardware continue to improve, opportunities for applications outside of entertainment and enterprise begin to present themselves. This study sought to approach VR as a method of treatment for anxiety.

# THESIS STATEMENT

As many as 25 percent of the 1 billion U.S. airline passengers each year experience some nervousness about flying (Seaney), an extended reality interface can alleviate or mitigate anxiety, claustrophobia, and fear passengers experience during travel.

**RESEARCH**



# LITERATURE

The hypothesis of this study is that a fully immersive virtual reality interface will allow passengers to escape their in-flight anxiety or aviophobia. This literature review sought to better understand what studies have been previously conducted within the areas of anxiety treatments, flight anxiety treatments, and virtual reality as a tool for treating anxiety.

# TREATMENTS

CBT (Cognitive Behavioral Therapy)

VRET (Virtual Reality Exposure Therapy)

Mindfulness Meditation Therapy



## LITERATURE FINDINGS

The findings of this literature review presented the opportunity to create a VR interface that seeks to alleviate anxiety in-flight using mindfulness meditation along with methods of distraction through immersion. The data gathered in this literature review was crucial in defining the ultimate interface.

# RESEARCH

## **Quantitative Data:**

Surveys served as the first step in understanding users and demographic information. Surveys were sent out containing general questions pertaining to anxiety, travel, and demographics.

## **Qualitative Data:**

Users that experienced the most anxiety in surveys were invited to interview. Airline workers (flight attendants were also invited to interview). Sought to understand the passengers' thoughts, fears, desires, and motivations.

# RESPONDENTS

## **Quantitative Data:**

Surveys (10 questions) covering general questions involving travel, in-flight experience, and anxiety were released and remained public for approximately 7 days. Over the 7 days, 56 persons responded.

## **Qualitative Data:**

5 Participants in the passenger group agreed to be interviewed. After passenger interviews were conducted, airline workers were contacted to be interviewed for their perspectives. A total of 5 flight attendants were interviewed.

# FINDINGS



## SURVEY FINDINGS

- 82.1% traveled by air in the past year.
- 50% of respondents reported that air travel caused them the most anxiety.
- 58.9% reported that takeoff and landing were times when they experienced the most anxiety in-flight.
- Top activities to pass the time: “Watch TV or a Movie”, “Work”, “Sleep”, and “Read.”
- Top anxiety remedies: “Deep Breathing”, “Meditation”, “Mindfulness”, and “Prayer.”



## INTERVIEW FINDINGS

### **Passengers:**

Anxiety Contributors: Pressed for time, takeoff, landing, and turbulence.

Anxiety Treatment: Distractions such as reading, sleeping, or watching movies.

### **Flight Attendants:**

Anxiety Contributors: Lack of control, turbulence.

Anxiety Treatment: Problem solving, phones or devices, talking to a friend, meditation.

# RECCOMENDATIONS

**Mindfulness Meditation**

**Calming Visuals**

**Therapeutic Audio**

**Entertainment Options**

# ANXIETY IN AIR TRAVEL PRESENTATION



## Sean

### Time-Conscious Traveler

#### About



Charlotte, NC



IT Services Sales



31 Years Old

#### Motivations & Goals

- Be conscious of his time, arrive early
- Make it to his meetings and conferences on time
- Let go of his anxiety once he know's he's made his flight

#### Interests & Influences



#### Background

Sean is a time conscious traveler. He needs to travel regularly for work meetings and conferences. A missed or delayed flight could cost him a client or worse. For this reason, Sean tends to experience some general anxiety while traveling.

#### Frustrations

- Flight delays
- Traffic or lines at security
- Inability to relax once he's made it to his flight

#### Expectations & Needs

- Needs a way to relax once he's in his seat
- Needs a way to treat or mitigate some of his anxiety
- Expects empathy from airline workers for his situation




# ANXIETY IN AIR TRAVEL PRESENTATION



## Carrol

Anxiety-Prone Traveler

### About

-  Boston, MA
-  Finance
-  52 Years Old

### Motivations & Goals

- Prepare ahead of time for any unexpected occurrences
- Find ways to treat or mitigate her anxiety during flights
- Make it through the flight without any panic attacks occurring

### Interests & Influences



### Background

Carrol is an anxiety-prone traveler. She travels a few times a year for training and conferences. If she can, she avoids traveling because flights give her severe anxiety. For this reason, Carrol also seeks ways to distract herself or mitigate her anxiety.

### Frustrations

- Unexpected turbulence
- Lack of understanding from flight crew
- Inability to relax or mitigate anxiety

### Expectations & Needs

- Needs a way to feel like she is in control
- Needs a way to treat or mitigate some of her anxiety
- Expects understanding and empathy from airline workers and fellow passengers

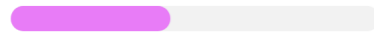
## The Air Travel Journey

### Anxiety-Prone Traveler

#### 1 Arrives at Airport

Carrol arrives at the airport and proceeds to check in to her flight at the ticket counter. She has to wait in a long line and is worried about the weight of her bag.

##### Anxiety Level



#### 2 Enters Security

Carrol makes her way to the TSA security line. Once again, there is a long line and she begins to worry about time. She also worries about prohibited items.

##### Anxiety Level



#### 3 Heads to Gate

Carrol makes it through security. She is slightly behind so she quickly searches for signs and heads towards her gate. She is worried she may not find it in time.

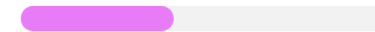
##### Anxiety Level



#### 4 Arrives at Gate

Carrol arrives at her gate with some time to spare. She sets down her bags and heads to the ticket agent to make sure everything is on time. She is very relieved.

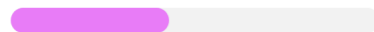
##### Anxiety Level



#### 5 Boards Plane

When the time comes Carrol boards the plane and begins searching for her seat. She is nervous because she knows she'll have to tell her seat mate about her anxiety.

##### Anxiety Level



#### 6 Takeoff

After taxiing, the plane prepares to takeoff and eventually does take off. Carrol is very anxious but tries to remind herself that the pilots are trained and it's a safe way to travel.

##### Anxiety Level



#### 7 Turbulence

Around mid-flight, the captain comes on and announcing they may encounter some turbulence. At this point, Carrol is terrified. During turbulence, Carrol experiences panic.

##### Anxiety Level



#### 8 Landing

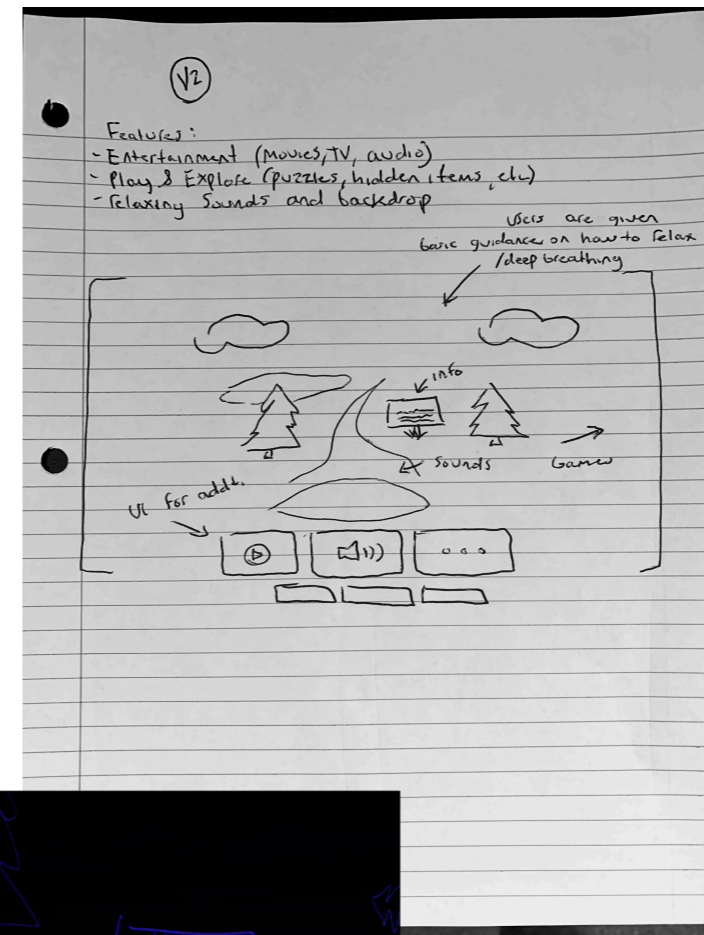
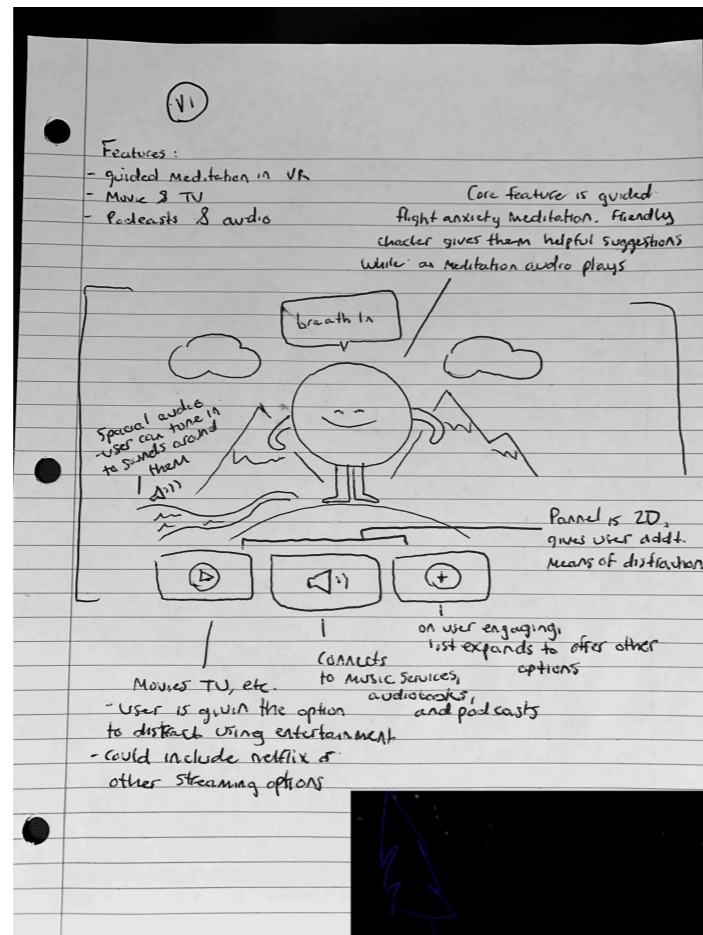
When time comes to land, Carrol is much calmer. However, her anxiety begins to rise again when she feels the landing gear come down. She closes her eyes for the remainder of landing.

##### Anxiety Level



**DESIGN**

# ANXIETY IN AIR TRAVEL PRESENTATION



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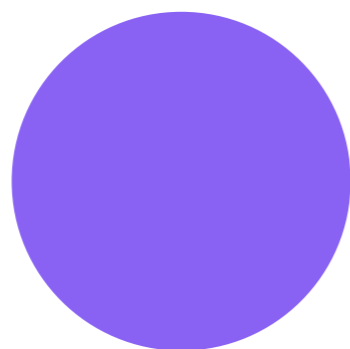
**H O V E R**

# Roboto Bold

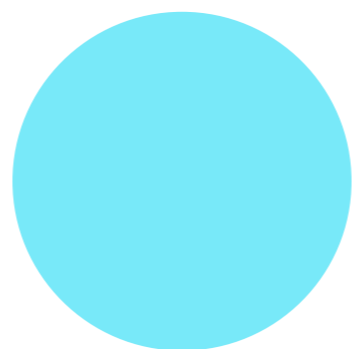
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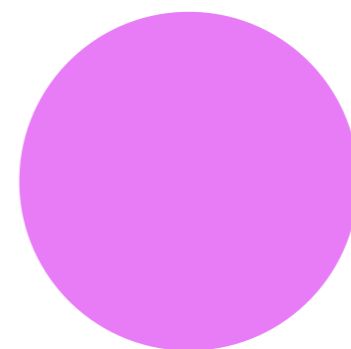
# ANXIETY IN AIR TRAVEL PRESENTATION



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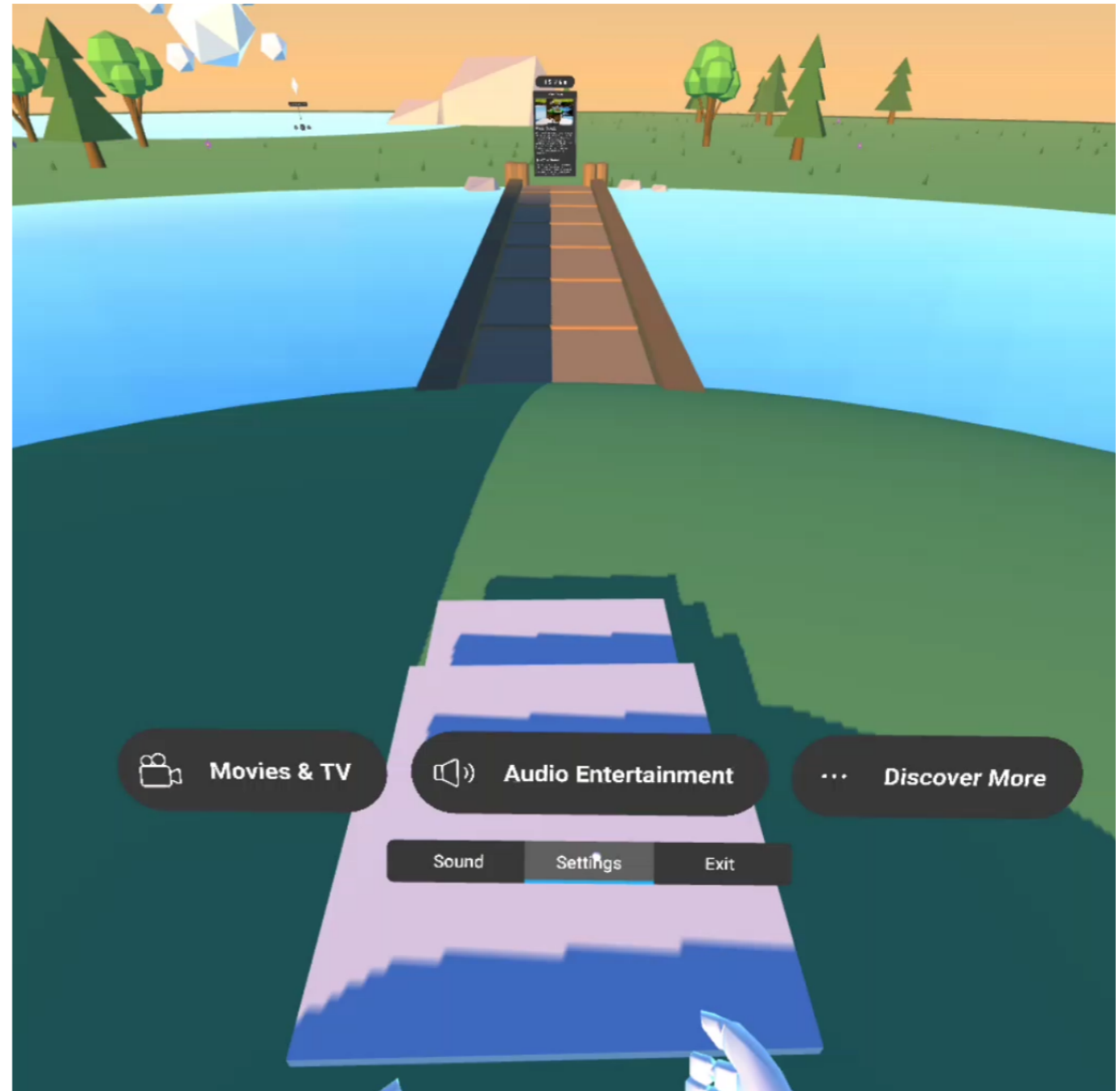


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# NAVIGATE

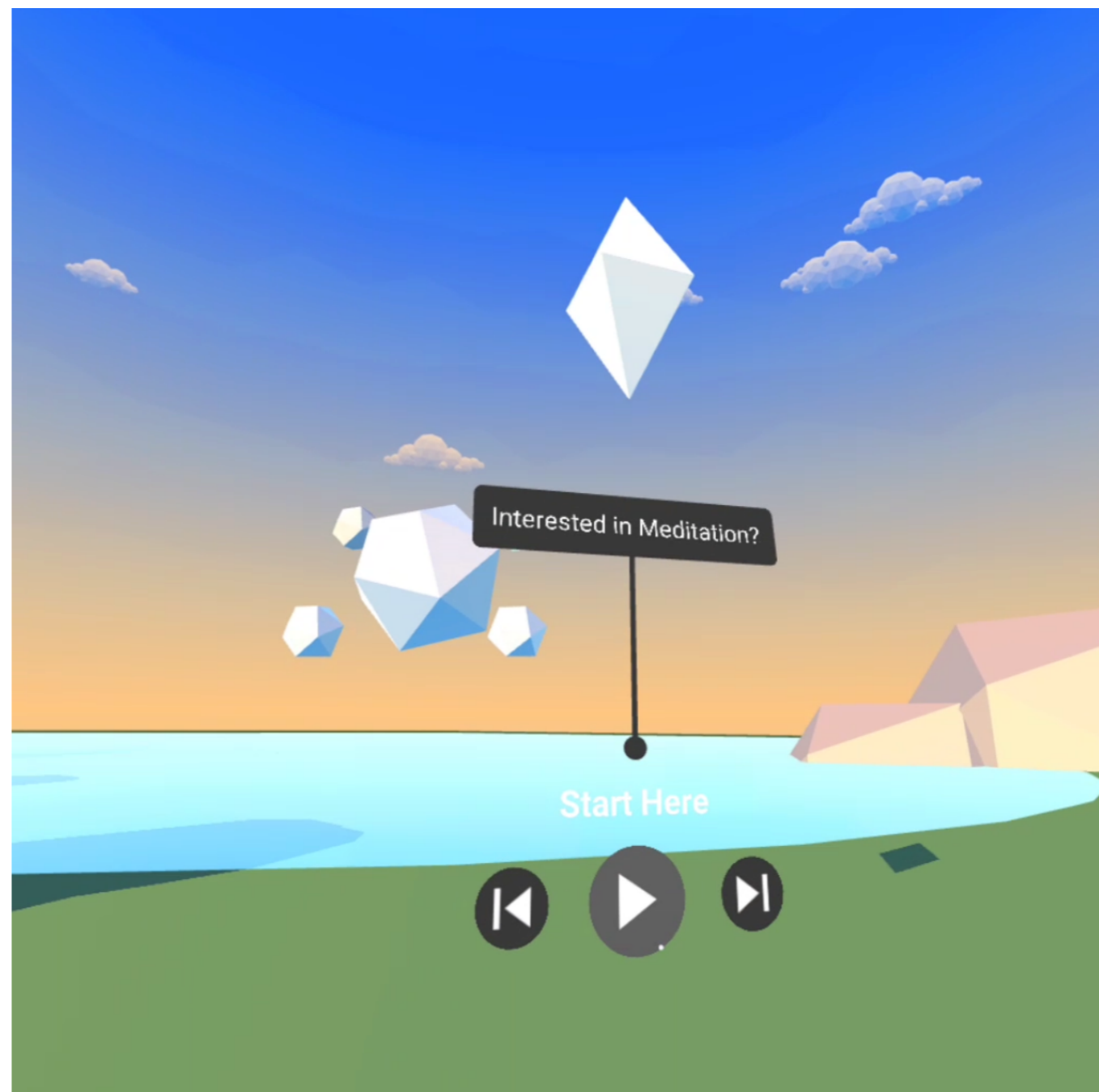


# ANXIETY IN AIR TRAVEL PRESENTATION

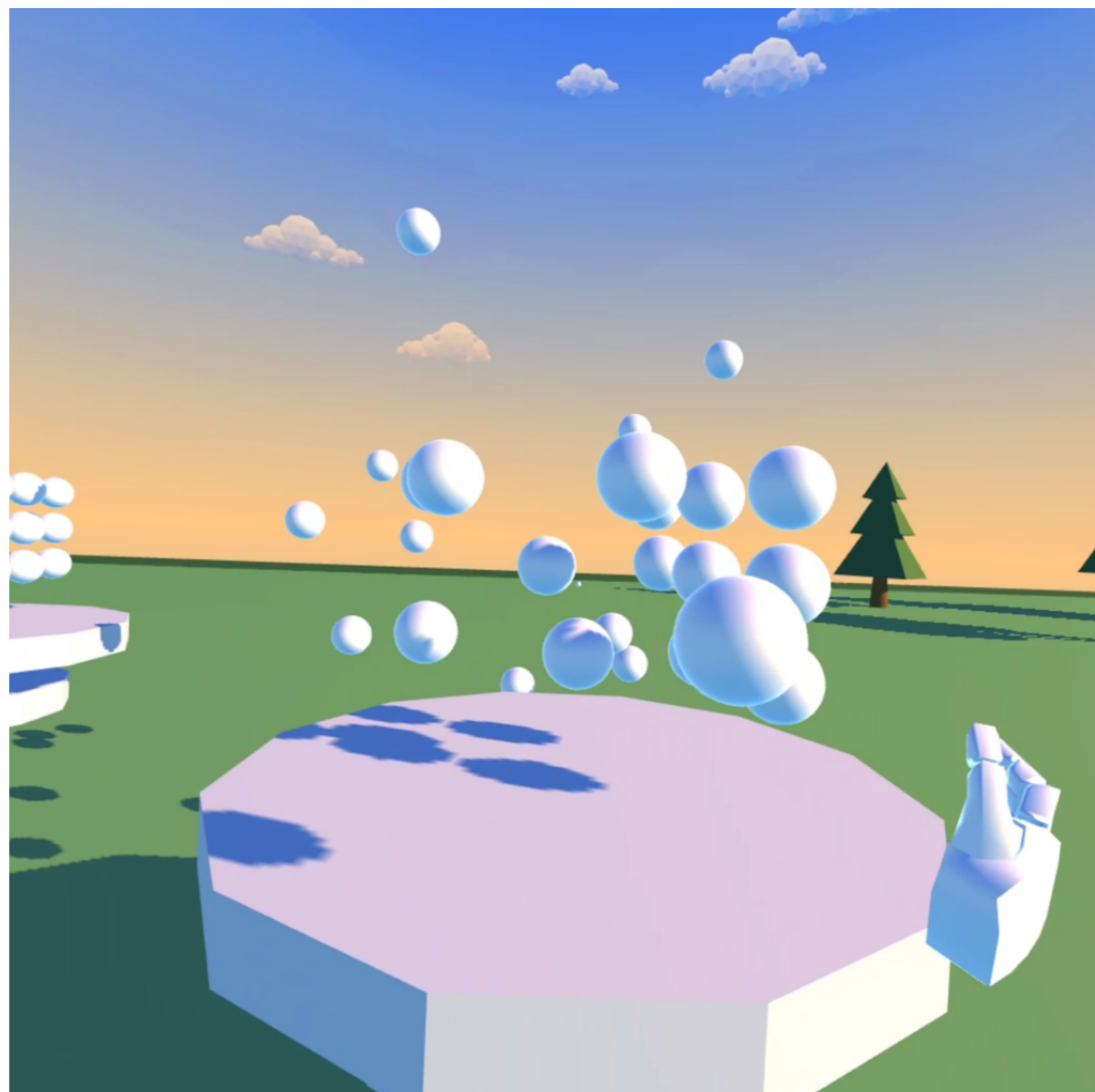
# EDUCATE



# MEDITATE



DELIGHT



**TESTING**

# USABILITY

Users required some initial instruction to understand the controls of the VR interface. Users reported to appreciate calming visuals of the scene. Further usability testing will attempt to bring in more complex tasks and test additional features that will be added to the prototype.

## NEXT STEPS

The promise of AR and VR technology is seemingly endless. It can be recommended that, in future studies, usability tests be performed in real-world settings to understand the efficacy and limitations of an anxiety-reduction based VR interface.

**THANK YOU**