

Ocean Literacy at Hanauma Bay





A Mural of Discovery

Tyler Lum
LTEC690

Learning Design and Technology Program
University of Hawai'i at Mānoa
April 28, 2022



Agenda

-  1 - Introduction - What's This About?
-  2 - Design - The How and Why
-  3 - Evaluation - What Did and Did Not Work?
-  4 - Conclusion - Now What?

An underwater scene with sun rays filtering down from the top. The background is a gradient of light blue. At the bottom, there is a dark blue silhouette of the ocean floor with various sea plants and rocks. Several small fish are swimming in the water. The number '1' is centered in the upper half of the image.

1

Introduction

Ocean Literacy at Hanauma Bay



Aloha

Tyler Lum

Informal Education in Outdoor spaces

Hanauma Bay and Bishop Museum

Introduction



Problem Statement

Visitors to Hanauma Bay
Nature Preserve lack Ocean
Literacy

A split-level photograph showing a tropical island with palm trees and a thatched hut in the background, above the water. Below the waterline, a vibrant coral reef is visible with various types of coral and small fish swimming. Sunlight rays penetrate the water, creating a dappled light effect on the reef. The overall scene is serene and beautiful, representing a healthy ocean environment.

What is Ocean Literacy?



Introduction

Who

Local visitors to
Hanauma Bay
Nature Preserve

What

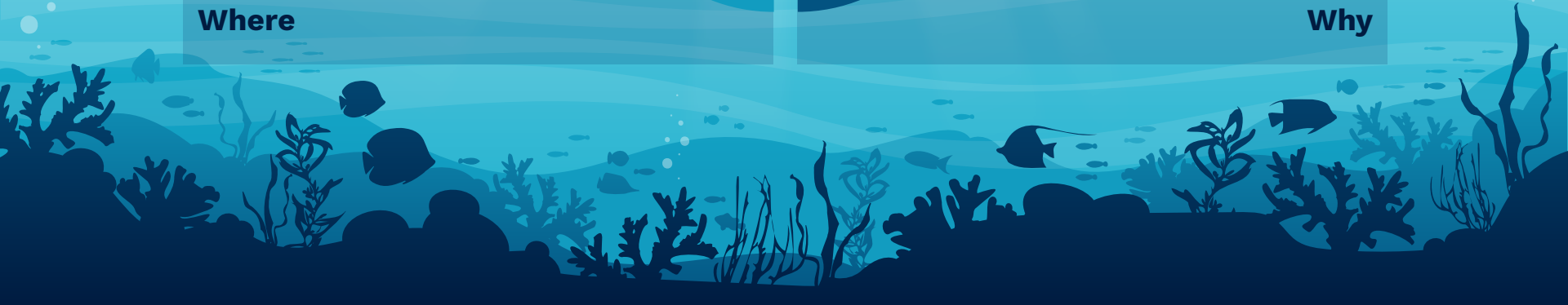
Ocean literacy and
stewardship

Hanauma Bay
MLCD

Where

Marine life
conservation and
preservation

Why



Introduction

Goal Statement

Learners will be confident in their ability to positively impact marine ecosystems and apply these actions in their daily lives



The background is a stylized underwater scene. Sunbeams of varying widths radiate from the top center towards the bottom. The water is represented by horizontal bands of different shades of blue. At the bottom, there is a dark blue silhouette of the ocean floor with various plants, coral, and rocks. Several small fish are scattered throughout the scene, some near the bottom and others further up. Bubbles are visible on the left and right sides, rising towards the surface.

2 Design

Interactive Instruction

Design

Audience

Local visitor covers a diverse group of learners. Shared characteristics include:

- Interest in Hanauma Bay
- Transient Learners



Content

Equally broadly appealing to meet the needs of the many

Design

Theories

Constructivist approach to learning; Learning through discovery and in relation to their activity at Hanauma Bay



Strategies

Keller's ARC(S)
Model to build connections

18.

Chooses to take actions that positively impact marine environments

16.

Confident in explaining human impacts on marine environments

17.

Confident in ability to positively impact marine environments

11.

Determine healthy marine environments

12.

Explain connection between humans and marine environments

13.

State actions that negatively impact marine environments

14.

State actions that positively impact marine environments

1. List native species

2. List invasive species

3. List signs of healthy coral

4. List human impacts on the ocean

4. List ocean impacts on humans

5. Aware of pollution

6. Aware of climate change

7. Aware of over fishing

8. Aware of beach clean ups

9. Aware of renewable energy

10. Aware of sustainable fishing



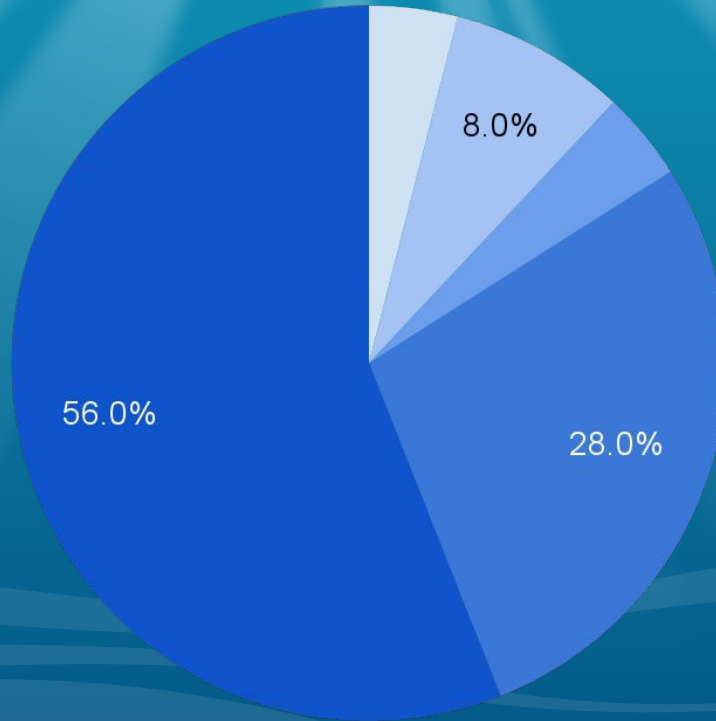
3

Evaluation

How did it go?

Evaluation

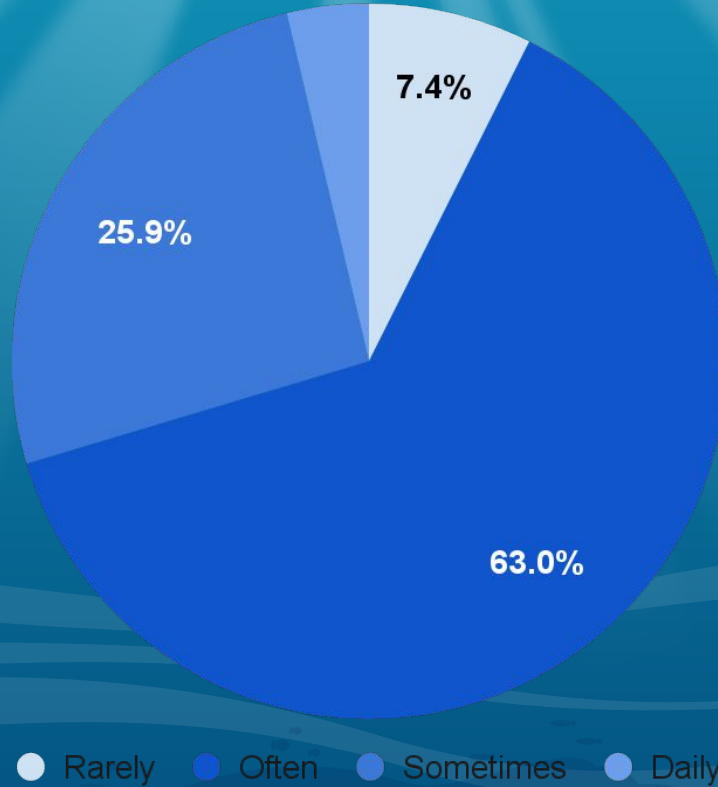
Participant Age Ranges (n=27)



● 24 and below ● 25-34 ● 45-54 ● 55-64 ● 65+

Evaluation

Beach Frequency (n=27)



Evaluation



Usability Testing

<i>Category</i>	<i>Round 1</i>	<i>Round 2</i>
Ease of use	Positive	Positive
Purpose	Negative	Positive
Visuals	Negative	Positive

Figure 1 consists of two panels, A and B, showing the experimental setup. Panel A shows a surgeonfish swimming in a tank with a substrate of coral rubble. Panel B shows a similar setup but with a layer of green algae on the substrate.

☐ B

	1	2	3	4	5	6	
Never	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Always

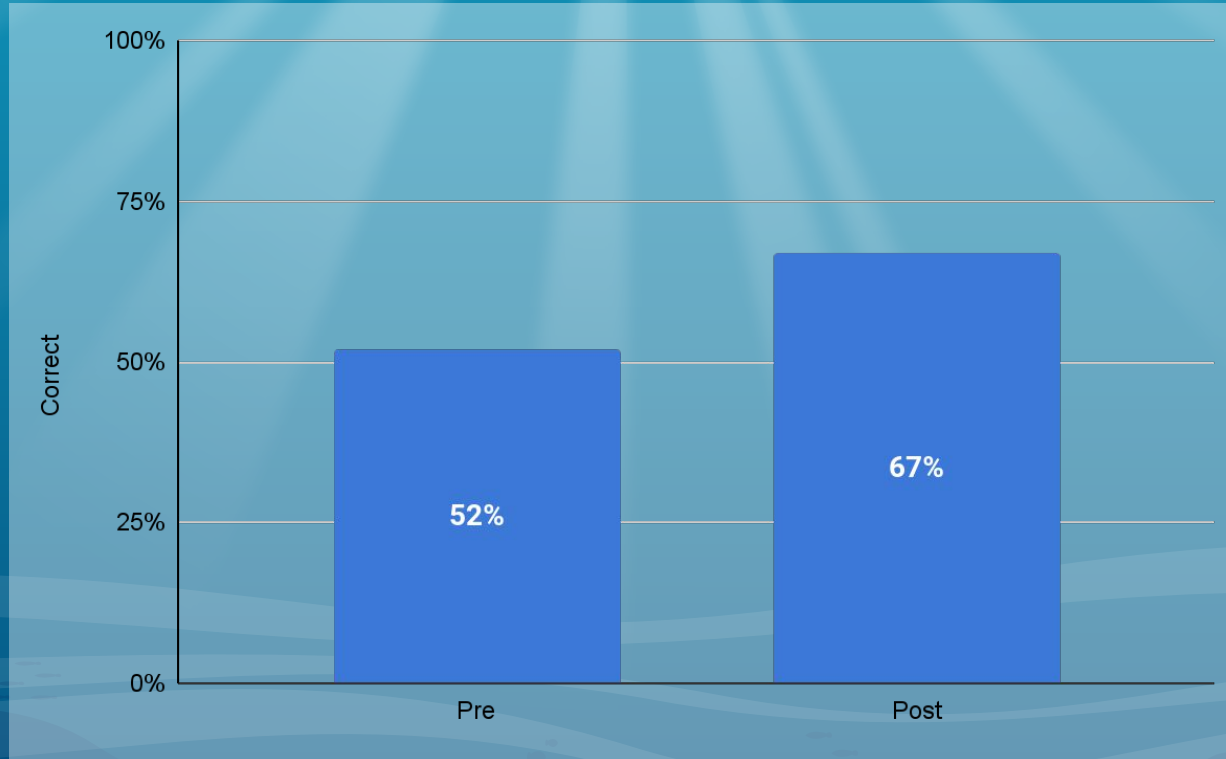
	1	2	3	4	5	6	
Not at all	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	Very likely

1 2 3 4 5 6

Not at all ○ ○ ○ ○ ○ ○ Very likely

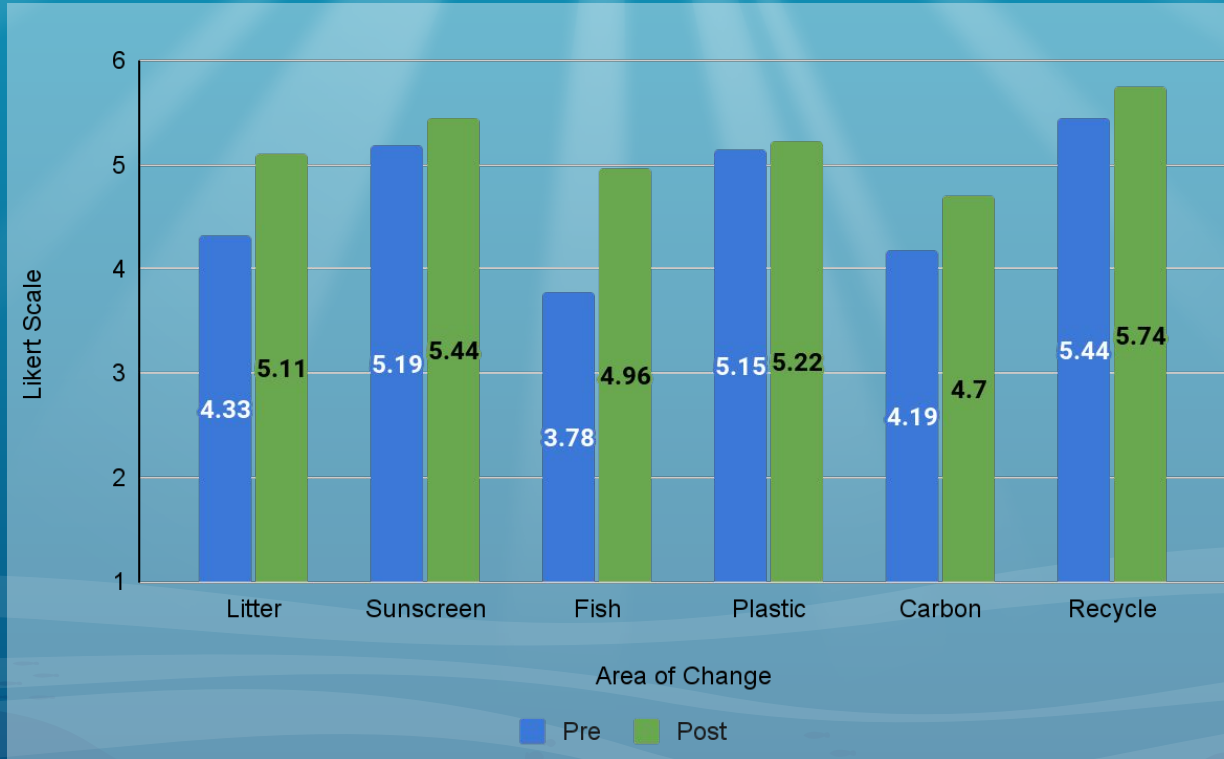
Evaluation

Which Reef is Healthier? (n=27)



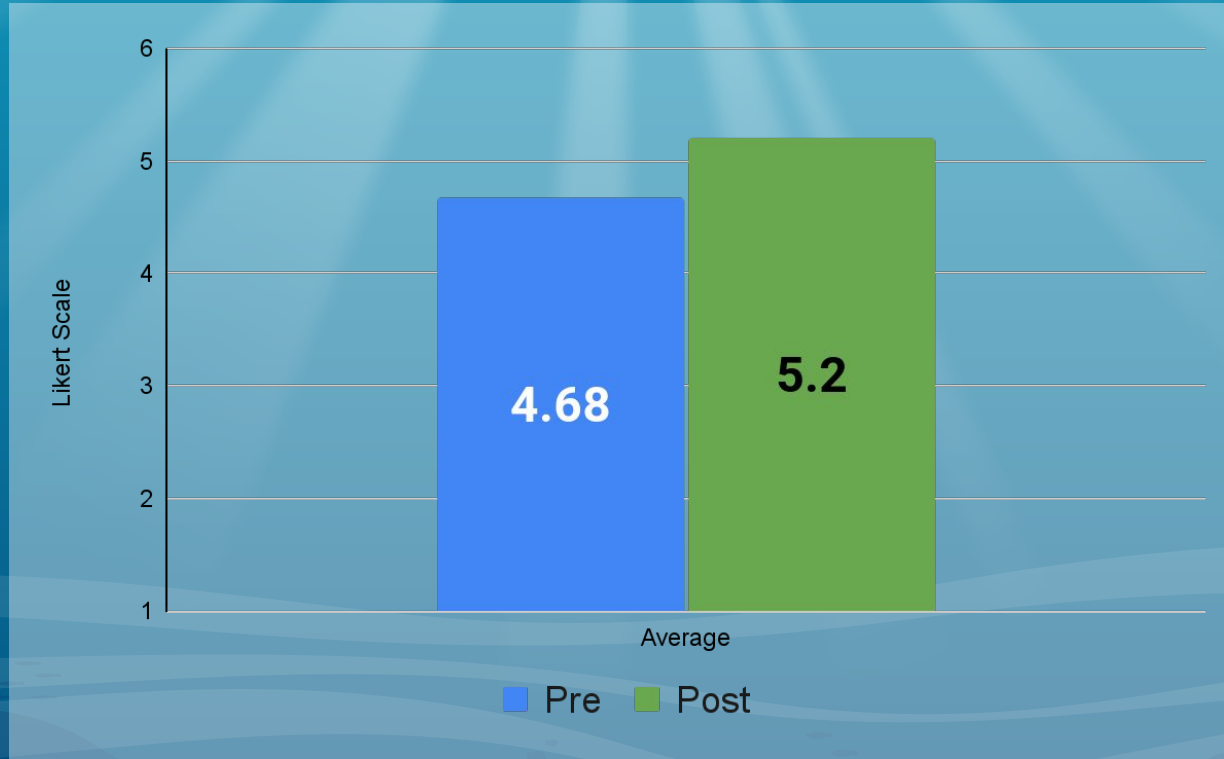
Evaluation

Willingness to Change Behavior (n=27)



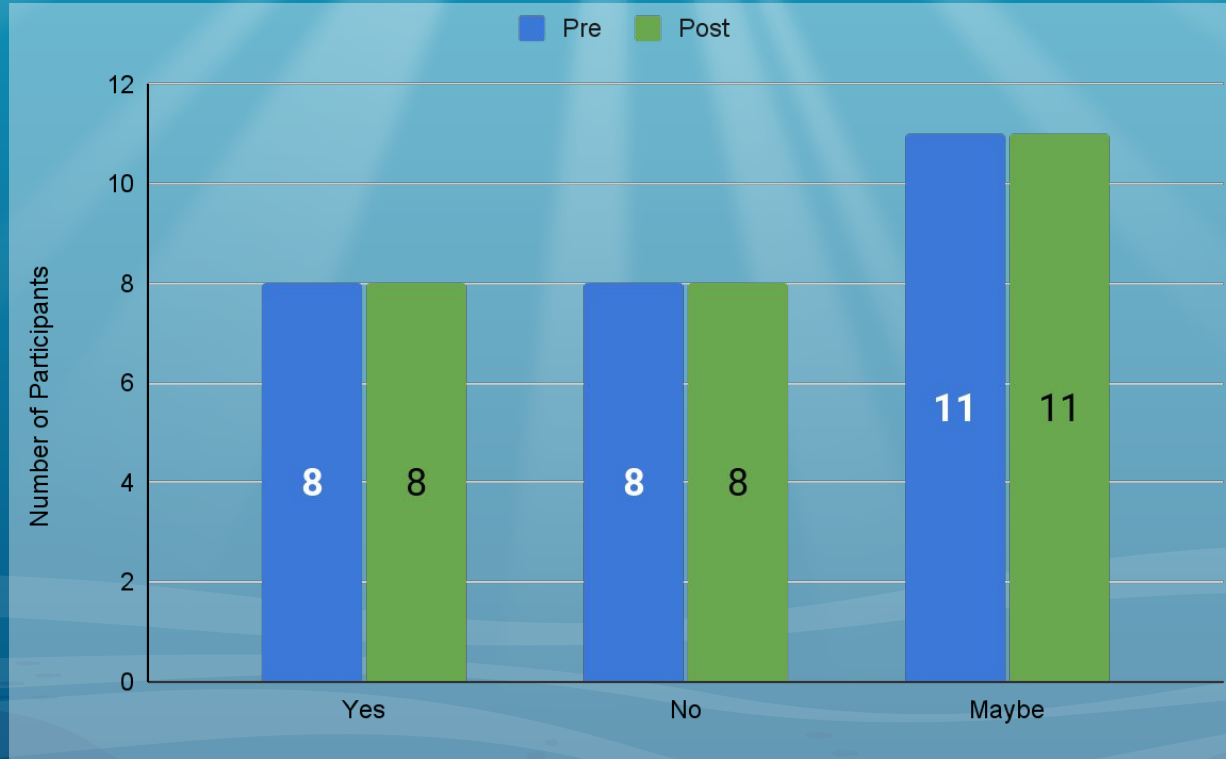
Evaluation

Average Willingness to Change Behavior (n=27)



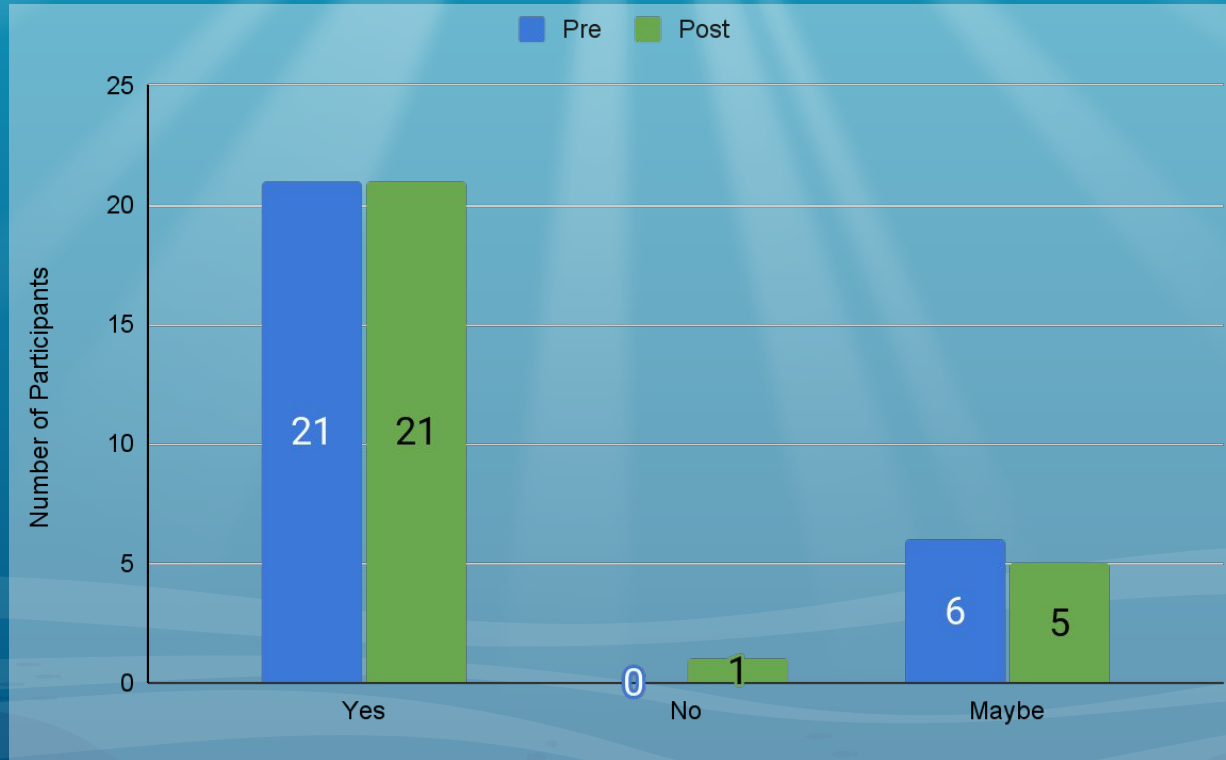
Evaluation

Do You Know Enough? (n=27)



Evaluation

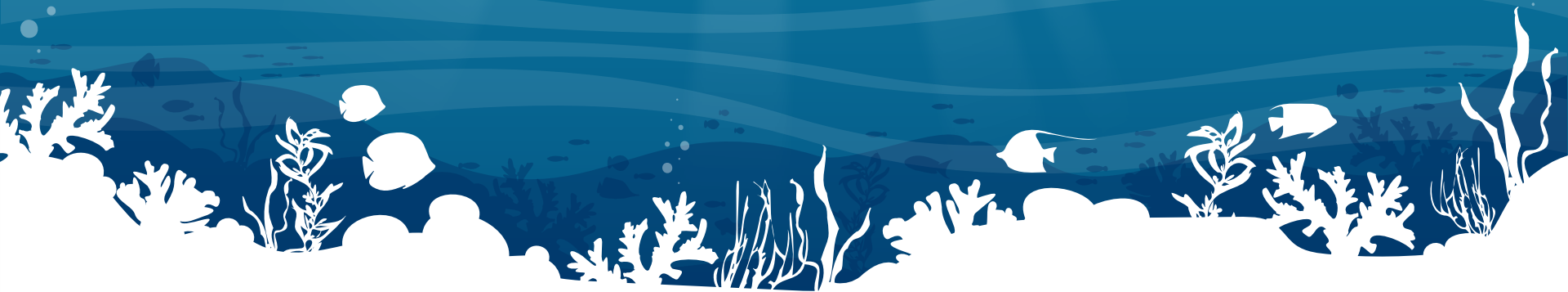
Want to Know More? (n=27)



2

Conclusion

Looking to the future



Conclusion

Goal Statement

Learners will be confident in their ability to positively impact marine ecosystems and apply these actions in their daily lives



Conclusion



The Future

He Pūko‘a Kani ‘Āina
A Coral Becomes an Island

An underwater scene with a deep blue background. Sunbeams of varying widths radiate from the top center towards the bottom. The bottom of the image features a white silhouette of a coral reef with various types of coral and seaweed. Several small white fish are swimming in the water. The word "Mahalo!" is written in a large, white, sans-serif font in the center of the image.

Mahalo!