UC-413

I Spy… Water Safety

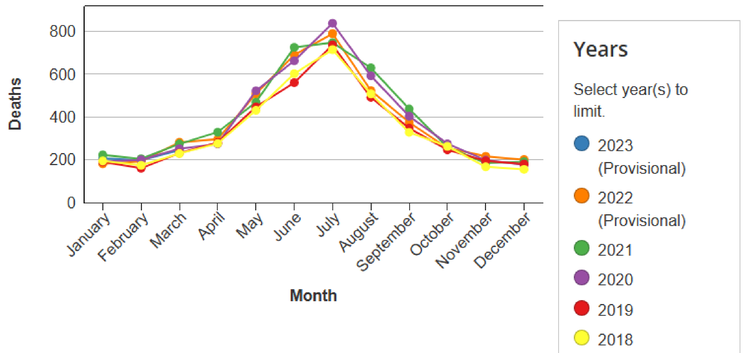
Abstract

I Spy Water Safety is a video game designed to teach a young audience of the importance of water safety. Our game is focused on the safety near and in lakes. The goal was to educate people in proper water safety etiquette as well as provide the knowledge in a fun video game format. Our project consists of three scenes; a beach front, the docks, and the lake. Each section is filled with NPCs performing acts that are not following Water Safety Protocols and the goal of the user to find those NPS's.

Introduction

The game was created for the Army Corp of Engineers at Carters Lake. It is designed to be played on a touch screen at one of their visiting centers. The idea was to attract people at the visiting center to the game and have them learn/test their knowledge on water safety, and hopefully teach them the importance of water safety.

In the United States alone, there is an average of 400 deaths caused by water related incidents per month. This average is on an upwards trend each year at alarming rates. Our goal is to lower the number of unintentional drownings by teaching the younger generation in an easy to learn video game format.



CDC Fatal Injury Trends Fatal Injury Trends | Injury Center | CDC

Research Questions

Our research questions consisted of the following:

- How much does the younger generation know about water Safety?
- Does our video game provide easy to understand scenarios children can learn from?
- What scenarios are children unaware of the safety hazards?

Creation Methods

For the creation of the video game itself we utilized the game engine Unity. Unity provided us with a system that was easy to manipulate and import our created assets to. This allowed us to import, create, and animate objects with ease in our system. For version control we used GitHub Repository. This enabled our team to work simultaneously on separate parts of the game to increase our efficiency. Our software development methodology was Rapid Application Development. Rapid Application Development allowed our team to gather data while still creating newer iterations of the game.

Game Pictures

Data Gathering

Our required data consisted of time played and questions a player got right or wrong. This allowed us to gage the knowledge of our players before finishing the game and after finishing the game. To collect data, we gathered students from _____ elementary school to play our game. We had each student play the game twice and recorded the time played as well as each question they got right and wrong though each iteration.

Results

The results of our data gathering showed two clusters of students regarding the time it took and the number of scenarios they got right on their first playthrough. As shown in Figure 2. below, a large group of students were grouped in between 8 and 9 minutes with only 10 to 15 scenarios answered correctly.

The results gathered from the second playthrough as shown in Figure 3., yielded an improvement in both, the number of scenarios answered correctly as well how much time it took to play through the game. The average time it took to finish the second playthrough averaged at 6.2 minutes and an average of 16 question were answered correctly.

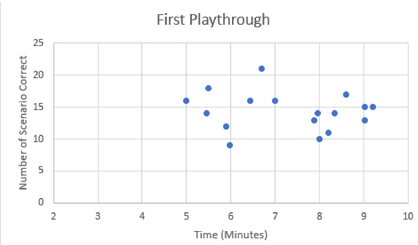


Figure 2. First Playthrough

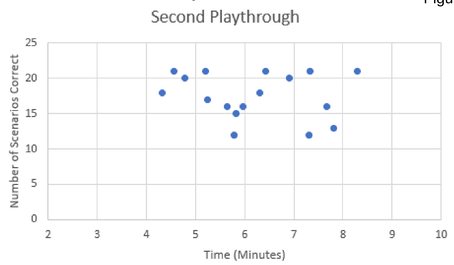


Figure 3. First Playthrough

Conclusions

Our results showed that there are gaps within the student's water safety knowledge. Scenarios such as swimming past the swim line and rope swings had a high incorrect rate. With playing our game designed to teach water safety, the students showed a clear increase in their knowledge on the risks of lakes. With the time played decreasing and the number of scenarios correct increasing through the second playthrough, it is safe to conclude that majority of the children learned more about water safety than they had previously known before playing our I Spy… Water Safety Video Game.

More Information

For more information, use the QR code to view our website:

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