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Game of Floods: Water Is Coming

Lily Daniels
Old Dominion University

Andrew Lindgren
Old Dominion University

Michael Neczyporuk
Old Dominion University

Madison Perry
Old Dominion University

Game of Floods: Water is Coming

A Presentation of Research by Lily Daniels, Andrew Lindgren, Michael Neczyporuk, and Madison Perry

Structure

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- Background
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  - The Game of Floods
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- Results
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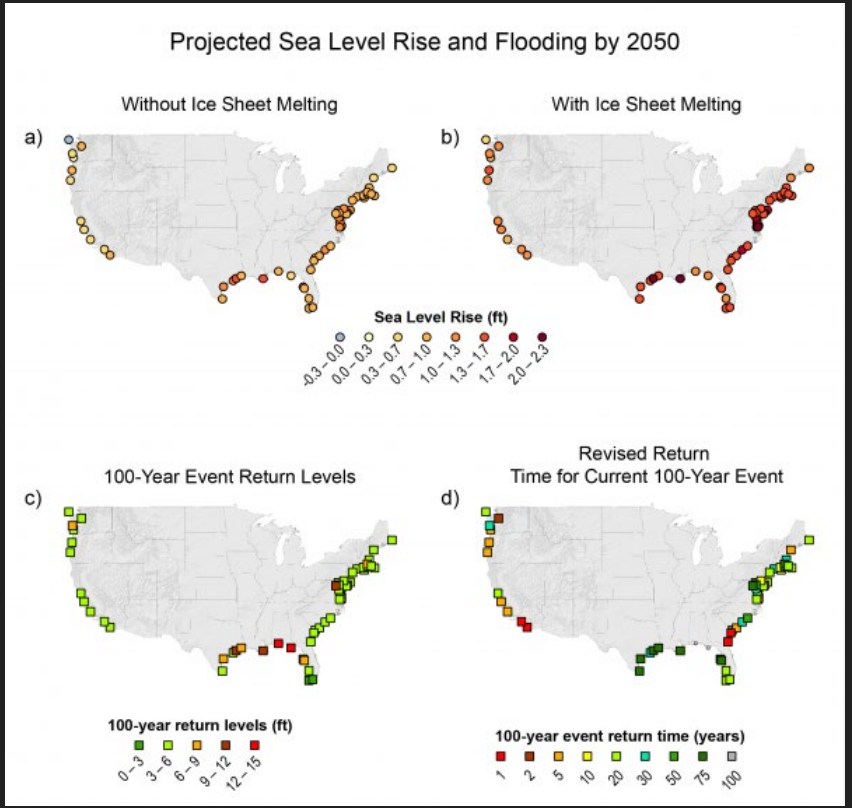
- Discussion
  - Implications in field
  - Direction for future research



Introduction

The issue:

- 40% of world's population lives near coast (NOAA, 2018).
- Seas rising at increasing rate (NOAA, 2018).

The need:

- New tools to encourage understanding and discussion

The solution:

- Educational games

Research on The Game of Floods

What was the subject: The Game of Floods

Who was our audience: college students at ODU

How did we form the claim: UX Testing and summative analysis

Thesis

Game of Floods is an effective tool for communicating the risks posed by coastal flooding and educating players about mitigation methods.

Background

Summary of Current Scholarship

Optimism

Distrust

McGonigal

Games are an improved version of reality so we ought to “gamify reality” (McGonigal, 2011).

Gee

Games encourage players to become “producers” (Gee, 2003, p. 15).

Bogost

Games allow “free exploration” (Bogost, 2008) within existing constraints.

Great power, great responsibility.

Froelich

Game-based learning potentially infringes on player autonomy.

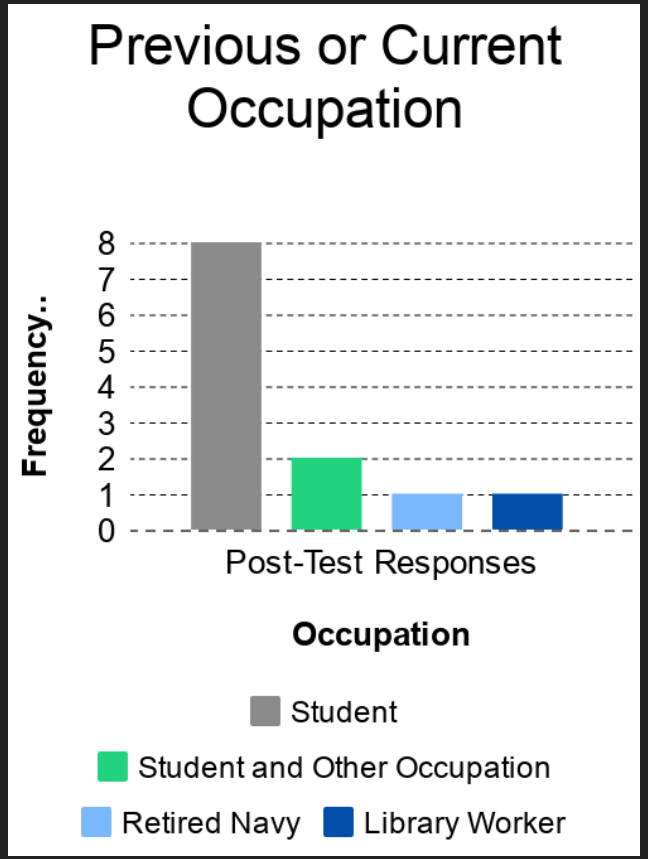
The Game of Floods

- Marin County
- USDN - “train the trainer”
- FEMA
    - Mari Radford (Lead Community Planner)

Methods

Sampling Methods

- Employed convenience and snowball sampling
- Gathered 12 Old Dominion University students



Methods of Data Collection and Analysis

Data Collection:

- Compiled observational field notes during gameplay
- Administered pre- and post-test surveys

Analyzing Data:

- Employed thematic inductive reasoning, grounded theory
- Looked for trends in participant actions and survey responses

Results

Results

Observations Categories:

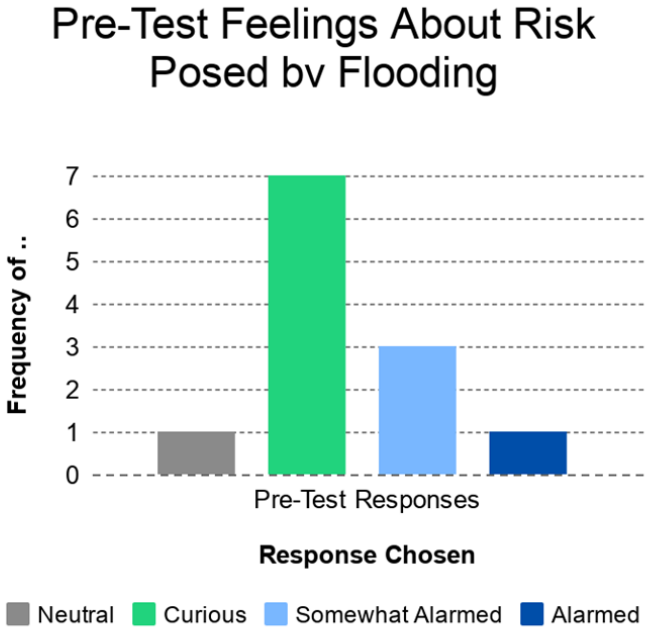
- Player interactions with the game itself
  - Game map, powerpoint, asset cards
- Player interactions with other players
  - Group discussion
  - Concept of roles

Conclusions Categories:

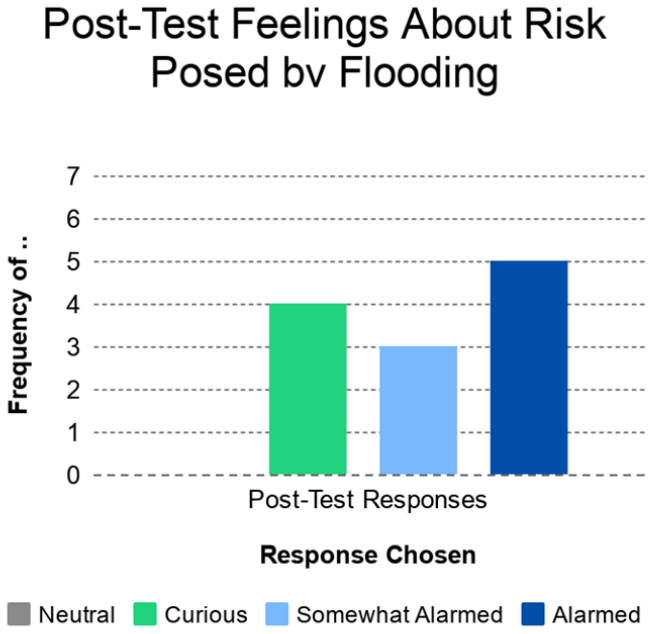
- Knowledge gained
  - More technical terminology
- Participant responses
  - Lapses in attention
  - Positive emotions
  - Increased curiosity

Players believed Game of Floods raised their awareness about the dangers of coastal flooding.

Before Playing:



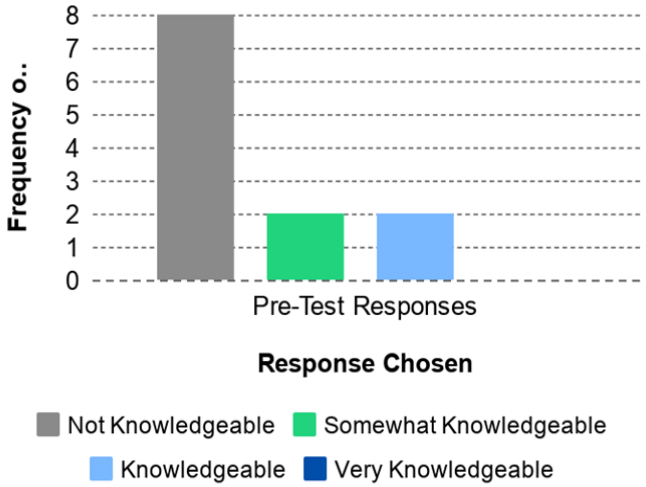
After Playing:



Players believed Game of Floods increased their knowledge about coastal resiliency.

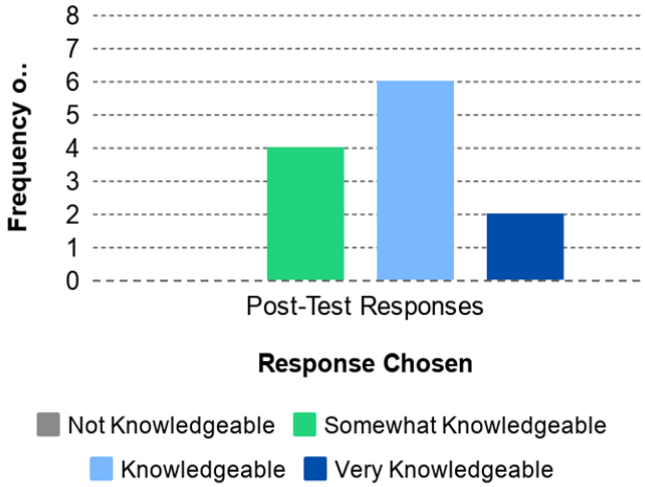
Before Playing:

Pre-Test Knowledge of Flood-Related Adaptation



After Playing:

Post-Test Knowledge of Flood-Related Adaptation



Knowledge Gained (Summative Evaluation)

- About stakeholders
  - 25% response rate increase, more specific responses
- About adaptation strategies
  - 33% response rate increase, used language of the game
- About risk
  - 33% response rate increase, gave the risk equation

Discussion

Conclusions

- Strong example of viability of games as educational tools
  - Literacy taught in field outside previous knowledge
  - Deep, relevant communication among non-experts

What does this mean for the field?

- Games teach separately from abstract methods (Gee 2003)
    - Emotional response to games aids learning (Wu et. al. 2015)
- Games mechanics can improve learning experience
    - Ex: Missing extrinsic motivation, some blank answers (Konetes 2010)
- Games are effective at fostering communication (Guillén-Nieto et. al. 2012)

Further Research

- Does learning here carry over to concrete action?
- How does the game work when specialists and lay people play together?
- How does the effectiveness compare to a game with concrete victory conditions?
- Can The Game of Floods or similar games replace classroom learning?

“Wow, we’re doing all this for a fictional city. What are we doing for Norfolk?”

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