Feb 22nd, 11:45 AM - 1:00 PM

“It [my research] would take place at 11:50PM”: Constructing a Realistic Simulation to Study Online Information Evaluation for School Projects

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“IT [MY RESEARCH] WOULD TAKE PLACE AT 11:50PM”

Constructing a Realistic Simulation to Study Online Information Evaluation for School Projects
Today’s Presenters

Amy Buhler, Engineering Librarian
University of Florida

Brittany Brannon, Research Support Specialist
OCLC Research
Point of Selection Behavior

Helpfulness
Citability
Credibility
Container

4th Grade → Graduate School
What is a simulation?

“...behavioral simulations model certain aspects of the social environment yet maintain the element of human choice. This type of simulation requires that involvement of human participants in the simulation itself.”

Gist et.al., p. 253
LIS Uses of Simulation

- Usability
- Systems Analysis
- Information Retrieval
- Training
Why we chose a simulation
How real is real enough?

Weighing realism against data collection
Intro to our simulation
(1) Simulated Situation

(2) Simulator

(3) Simulation Situation

Reference Situation

Transformation

Reality

(Adapted from Vidal-Gomel & Fauquet-Alekhine, 2016)
the replication of the category of situations being studied
Assignment Prompt

**Research Prompt:**
You have an assignment to write a science report that investigates the Burmese Python in the Everglades and describes the ways that this animal is affecting the Everglades habitat.

**Research Prompt:**
You are beginning a literature search for your Wildlife Issues final paper. You’ve decided to focus on the impact of the Burmese python (*Python molurus bivittatus*) to the biodiversity of the Florida Everglades.
Choosing a system
Designing Tasks

- Helpful
- Cite
- Not Helpful
- Credible
- Container
Student Feedback on Simulated Situation

Where students go
- Starting point: 16%
- Additional places: 12%
- Reading/Exploration: 11%

Information consumption
- Writing/Note-taking: 5%
- Number of Resources Req.: 8%

Project context
- Background knowledge: 3%
- Topic/Prompt: 2%

N=175
the artifact that replicates a real-life phenomenon
Visual design
Visual design - SERPs

Everglades Python Challenge: the hunt for an invasive species …

Burmese pythons in Florida - Wikipedia, the free encyclopedia

Burmese Pythons: Research – National Park Service
https://www.nps.gov/everglades/burmese.php

Florida’s Python Problem: Snakes Reshape The Everglades : NPR
www.npr.org/2013/10/31/226227/burmese-pythons-threaten-everglades

Burmeses Pythons Are Taking Over the Everglades | TIME
www.time.com/8523656/burmeses-pythons-are-taking-over-the-everglades
Burmese Pythons: Research

Nowhere else on the planet has such a large constrictor been introduced and established in a foreign locale as a result of the exotic pet trade. The invasive population of Burmese pythons in the Florida Everglades, therefore, requires resource managers to rely upon original scientific research and novel strategies to guide control efforts. Follow the links below to access additional resources on lessons learned and studies currently underway.

Fact Sheets

Burmese Pythons Fact Sheet
April 2013
Hi-Res. 2 MB | Lo-Res. 300 KB
Triggers
Student Feedback on Simulator

N=175

Limited functionality

Appearance

Visual appearance: 5%
Multiple searches: 22%
Multi-tabbing: 10%
Citation chaining: 7%
Clickable links: 6%
Number of results: 10%
Result quality: 7%
Blocked sites: 1%
everything that happens while the simulation is conducted
Phases of Simulation Situation

- Briefing
- Simulation Session
- Debriefing
Think-aloud Prompts/Probes

In addition to reminding participants to think aloud when they become silent, be sure to give positive reinforcement when they are making detailed observations.

- Tell me more about...
- Remember to talk out loud about your decisions...
- Remember to talk out loud...
- Remember to explain your thought processes as you are making your decisions...
- Tell me what you are looking at
- What was it about that resource that made you click on it?
- Why is that...?
- Ask for elaboration on any vague terms, such as “flashy” or “snaky”
- When participant identifies the container, be sure to prompt for explanation

- Try not to lead by asking too specific of a question
Think-Aloud Protocols

Purpose: To determine whether students can determine/accurately identify container types.

Facilitator prompt: These are (21) of your original search results. Select the container that you think best describes each item. To label each item, just drag the green tag from the right of the screen to the box below the resource. Please keep talking out loud as you complete the activity.

Make sure that only one tag is applied to each resource before the student moves to the next page. Tags that are actively applied will be italicized.

Questions/comments:

Variables Collected: CNTNRSC (pre-selected subset of the resources only); CNTNR (pre-selected subset of the resources only)
Interviews

- Library interaction
- # of research projects
- Last research topic
- Device use
- School social media use

Pre-Simulation
- Confidence
- Care
- Container

Post-Simulation
Student Feedback on Simulation Situation

- Time limit: 6%
- Environment: 4%
- Think aloud protocol: 2%

N=175
How real is real enough?

“It would take place at 11:50PM”
So what about the data?

Opportunities for analysis
Diving Deep
It's a YouTube video [laughter]. Well I guess it's uploaded by the Associated Press, at least, to be fair [laughter]. So [laughter]. Let's see they have the text in here. I think this is actually the video that was in the introduction maybe. I don't remember exactly. Anyway, If it's uploaded by the Associated Press at least that is a real source. This headline though like, the all caps. It's like, "You won't believe what happened next [laughter]." Okay. Well, I'm going to leave that one just unchecked.

- G16
So, NPR, yes, because they have a professor that is knowledgeable in the field. It would be easy to cite it because it was a publication, an interview.

– S14
And then I would say two because I'm not exactly sure either because, at first, it talks about the Everglades, so I wouldn't know exactly.

– E01
Next is another journal article from Springer. I think this one is actually a book. What the heck is this?

*What made you think that?*

It has chapters instead of articles, so it's probably a book.

- G27
Looking Across
Quantitative - Data Within A Cohort

Undergraduate Credibility Scores

- **Resource Score**
- **Undergrad Average**

<table>
<thead>
<tr>
<th>Resource</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wikipedia</td>
<td>2.0</td>
</tr>
<tr>
<td>Sponsored Post</td>
<td>3.5</td>
</tr>
<tr>
<td>New York Times</td>
<td>4.0</td>
</tr>
<tr>
<td>BioRxiv</td>
<td>4.5</td>
</tr>
<tr>
<td>Wiley Journal</td>
<td>4.0</td>
</tr>
<tr>
<td>Springer Book</td>
<td>4.5</td>
</tr>
</tbody>
</table>
Quantitative - Data Across Cohorts

Percentage of Students Who Chose Each Resource as Helpful

(Buhler et al., 2019)
Qualitative - Data Within A Cohort

Graduate - Codes Mentioned by Participant

- # Cue Codes Mentioned
- # Judgment Codes Mentioned
- # PersComm Codes Mentioned
- # Theme Codes Mentioned
- # Resources Mentioned
Qualitative - Data Across Cohorts

Mentions of Fact Codes Per Cohort

- Graduate
- Undergraduate
- Community College
- High School
- Middle School
- Elementary

Legend:
- Facts, Proof, Evidence
- FPE Desirable
- FPE Not Desirable
The more you know!
Lessons learned
It takes time, effort, & expertise
RSIC Research Team

Amy Buhler, Engineering Librarian
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Randy Graff, Director of Educational Technologies
OCLC

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The Advisory Panel

K-12
- Adam Fournier: Middle Science Teacher
- Alix Freck: Public Librarian
- Jennifer Kuntz: School Librarian
- Megan Sorenson: Elementary Science Teacher

Adult
- Emilio Bruna: University Professor
- Matthew Carrigan: College Professor
- Jenna Miller: College Librarian

Gayle Evans: Science Master Teacher
References & Image Credits


Image Credits:
Slide 6
Image 1: https://commons.wikimedia.org/wiki/File:Vehicle_simulator.jpg
Image 2: https://www.flickr.com/photos/kentuckycountrydayschool/4332058135/
Image 3: https://commons.wikimedia.org/wiki/File:KidZania_pilots_thumbs_up_while_playing_in_a_cockpit_simulator.jpg

Slide 12
Image by DocChewbacca https://www.flickr.com/photos/st3f4n/3951143570
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Questions?

Keep Up With the Project:
https://guides.uflib.ufl.edu/RSIC
AND
@RSICStudy on Twitter

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