

## **Using Interactive Fiction for Informal Learning**

Michele Ritter

Digital Media: Games and Interactive Media, University of Central Florida

DIG6812: Digital Interaction for Informal Learning

Dr. Maria Harrington

December 10, 2020

## **Introduction**

Interactive fiction as a learning tool can be used to immerse its users more deeply in a narrative than traditional linear fiction allows. It places users into the narrative and gives them greater agency in a story and helps them to connect with characters and concepts more deeply. Applying this genre to learning, especially in informal settings would ideally allow for participants to become more fully invested in a story. Additionally, research has shown that interactive fiction can be used as a learning tool to help students make greater learning gains than those using traditional education (Shelton et al., 2008).

The Orlando Museum of Art has a vast collection of works ranging from pre-Columbian artifacts to modern sculptural pieces. It has an active education outreach program and where it works with schools to get students interested in art. Usually, this is done through tours where students are guided through the art exhibits and assisted with understanding and connecting with pieces. Interactive fiction can allow students to learn in a less formal, independent setting where they can take their time fully interacting with a piece at their own pace.

## **Overview**

The idea is to create a parser-based interactive fiction game which allows students to participate with a piece of art. Students will control the “character” of the subject of a work and interact with the setting of the piece. They will be given information through the lens of historical fiction, allowing them

to build on prior knowledge or learn something new. The piece of work used as inspiration for the game is Carl Mydans' *Newspapered Room of Sharecropper's Shack in Colton and Melon Fields, Missouri* (1936). The photograph is of a young girl in shack during the Great Depression. It is hosted at Magruder II Gallery as part of the Orlando Museum of Art's *American Journey: Two Centuries of American Art* exhibition.



Carl Mydans' *Newspapered Room of Sharecropper's Shack in Colton and Melon Fields, Missouri*

The work would also include historical details about the time period so that users can get a sense of what may have happened in the photograph's subject's lifetime and to encourage stakeholders to use the piece with their students. This factual content is based on educational guidelines and middle grades school curriculum to ensure that students are not misled or given information that conflicts with what they are learning in the classroom.

## **Users**

The primary users are middle school students (grades six through eight) approximately 10-15 years old. The goal is to help the students more fully connect with a piece of art while including historical information, and Florida State Standards were used as a guideline for what content was included in the work (CPALMS, 2019). Interactive fiction helps to immerse users more fully into a work as they feel they have greater control over the experience as it responds to them. The work strives to engage the students with the art beyond a cursory level while providing students with historical information regarding some of the major events and figures of the United States Great Depression. Additionally, the experience aims to look at the students' educational futures and basic high school level

standards were referenced to ensure that the application can serve as a prior knowledge experience for the students in a few years.

The experience relies on the fact that middle school students are comfortable with inputting text onto handheld devices and often do not read complicated directions before attempting to engage with technology. Students already use several educational technologies in the classroom such as Kahoot (Kahoot!, 2020) and Socrative (Showbie Inc., 2019), and thus are aware of such games and tools. A simple QR code will bring the users to the interactive fiction piece. While the program the code is written in— Inform7— has direct hosting options available, they vary among operating systems and many users would be unaware of which operating system their devices use. Because of this, the QR code will bring the users directly to the game hosted on a website. The instructions for the app will be simple and intuitive and include an optional, more in-depth set of directions describing interactive fiction available. Each experience is different depending on the user’s choices, so it will give them the opportunity to discuss novel experiences with their peers. Additionally, the experience does not require sound and will not be disruptive for other museum visitors.

Obviously, the experience is not limited to middle school students and members of the general public will have access to the work as well. Very young visitors would not be able to easily interact with the experience due to reading level limitations but could very well work with a parent or guardian who could input and read the story to them as the child makes choices. Adults may find the story juvenile and already be familiar with the content but could find the technology an engaging experience on its own while significantly increasing the overall dwell-time of the art piece. Specific user demographic information will be gathered as part of the research plan and include the following questions:

#### Demographics

1. Age of adult participant

18-25

26-35

- 36-45
- 46-55
- 56-65
- 66-75
- 76+

2. Age of minor participant

- 7-9
- 10-12
- 13-15
- 15-17

3. Grade level

- < 2nd
- 2nd
- 3rd
- 4th
- 5th
- 6th
- 7th
- 8th
- 9th
- 10th
- 11th
- 12th
- Associate degree
- College Student
- College Graduate
- Post-Grad
- Some College
- No College

4. Gender Identification

- Male
- Female
- Non-binary
- Choose not to disclose

5. Zip code

---

## Stakeholders

The stake holders are the Orlando Museum of Art, middle school teachers who plan to use the experience as part of field trips, and school administrators such as principals, deans, and school board members. Given the Orlando Museum of Art's bring your own device policy, the experience is designed to run on basic Wi-Fi or a cellular network. It will be initially hosted on a website accessible through a QR code and the raw files will also be given the Orlando Museum of Art's Associate Curator of Education and Outreach to make available to the museum's web team. There are available hosting platforms through the Inform7 program, but they are operating system specific and hosting on the web removes additional steps and directions that would need to be hosted in the gallery. This means that there are additional stakeholders through the Orlando Museum of Art would including the board of trustees, the Associate Curator of Education and Outreach, and the museum's technology team. The work needs to be appropriate for the general public and not be a distraction to other patrons. The museum is welcome to promote the work on their social media pages to encourage the use of interactivity with museum pieces. Given that the experience is entirely text based, however, it would be very difficult to market without bringing in additional costs or time to create a more formal marketing strategy. Fortunately, interactive fiction is generally a very personal experience and the goal is to include a QR code to make it generally unobtrusive and without sound or photography requirements to avoid any distractions.

The teacher requirements are obviously to help the students remain engaged in the work and overall museum experience. Additionally, teachers are always looking for greater depth of knowledge and rely on high-yield instructional strategies. Orange (OCPS, 2020) and Osceola Counties use the Marzano Model of Teaching Effectiveness (Marzano Editorial Team, 2020) for evaluation and curriculum, so that was referred to when determining the content and questions. If teachers are leading field trips, they are expecting the students to learn something through the experience. Additionally, it is easier to

convince administration that a field trip is worth the time and effort if there are clear learning goals available and related to the experience. Florida Standards were used as a guideline specifically so that these objectives are clear to the educators. The experience is safe, unobtrusive, and historically accurate so that it can be considered educational and used by classroom teachers without worrying about having to re-teach over any false information learned in the interactive fiction.

## **Educational Content**

There are several historical facts included in the work. This information can be shared in story text or read on the newspapers the walls. Through story exploration, students are exposed to the following piece of information. The student cannot successfully complete the game until all tasks associated with this information are completed. The content is limited to ten facts to prevent students from being overwhelmed with content and to assist in information retention.

**Sharecropping:** families rent land and pay their landlord in a portion (or share) of their crop (History.com, 2010).

**Great Depression:** the worst economic depression of the Western world lasting between 1929-1939 (Romer and Pells, 2020).

**“Black Thursday”:** The stock market crash that set off the depression that took place on Thursday, October, 24, 1929 (Romer, 2020).

**Muckraker:** journalist who reported on corruption and social hardships resulting from big business (Editors of Encyclopaedia Britannica, 2020).

**Herbert Hoover:** President when the depression started in 1929. Handled the situation poorly. Not re-elected in 1932 election (Biography.com Editors, 2019).

**Hooverville:** shantytowns created by the homeless of the Great Depression (Frantilla, 2020).

**Franklin D. Roosevelt:** President from 1933-1945. Set up a number of social and economic reforms (Biography.com Editors, 2020).

-Quote: “The only thing we have to fear is fear itself (Roosevelt, 1933).”

**Fireside Chats:** FDR’s addresses to the public where he delivered important information to the American people in an informal manner (History.com Editors, 2010).

**The New Deal:** legislation to fix the flaws in banks and the stock market. It also included plans to aid the unemployed and farmers as well as public works projects and housing (The editors of ushistory.org, 2020).

**Elanor Roosevelt:** first lady from 1933-1945. She was very influential in shaping her husband’s policies and was a champion for social justice (Michals, 2017).

## Standards Covered

The Florida State Standards covered include social studies standards (SS), visual arts standards (VA), and language arts standards (LAFS) (CPALMS, 2019):

SS.8.A.1.2 Analyze charts, graphs, maps, photographs and timelines; analyze political cartoons; determine cause and effect.

SS.8.A.1.4 Differentiate fact from opinion, utilize appropriate historical research and fiction/nonfiction support materials.

SS.8.A.1.7 View historic events through the eyes of those who were there as shown in their art, writings, music, and artifacts.

VA.68.H.1 Through study in the arts, we learn about and honor others and the worlds in which they live(d).

VA.68.H.2 The arts reflect and document cultural trends and historical events, and help explain how new directions in the arts have emerged.

LAFS.8.L.2.3 Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.

A. Use punctuation (comma, ellipsis, dash) to indicate a pause or break.

B. Use an ellipsis to indicate an omission.

C. Spell correctly.

## Technology

This project will be using Inform7 (Nelson, 2020) to create an interactive text-based experience. This code will be uploaded to itch.io (itchcorp, 2020) to allow users to experience it on any device that has access to a web-browser, primarily mobile smart phones. Additionally, a QR code will be linked to the URL so that it can be opened using any QR reader application using QR Code Generator (The QR Code Generator, 2020). Google Analytics (Google, 2020) will be enabled on the URL to track the time spent by the users on the experience.

Given the cluttered nature of the photograph chosen for this project, it is best not to add additional art assets to the piece. The idea is to use the application in harmony with the photo to assist users in forming their own meaningful experience with the piece. The project's reliance on text rather than image means that the user will spend additional time looking at the piece to further understand what steps to take within the game.

Additionally, Inform7 does not follow a set path or structure in the same ways that other interactive fiction platforms such as Twine (Klimas, 2020) or Ren'Py (renpy.org, 2020) do. Users are free



to experience the work in any order of their choosing and to interact with the photo's items at their own pace. They simply type in an action and object into game and the code responds in kind. As a result, the experience feels more immersive and as if the user has more control rather than following a set path of clearly delineated text, links, and image pieces. It also allows certain actions to have prose added to the piece (see blue text in sample code prefaced by "say") usually in the form of a scene. This is the best way to add important story or educational content to the piece and it is exciting to unlock a paragraph of text through user interaction.

There are limitations using Inform7. The software comes with a set of pre-understood verbs that may not be intuitive for new users. This can be overcome by creating new verbs or setting synonyms as words that are "understood" by the code. This is something which would be updated as issues arise since different players use different language. Additionally, the code is literal. If an asset is set as "sketchbook" the code will not understand that "book" means the same item. Again, this can be overcome by setting that "book" and "sketchbook" are synonymous, but it is time consuming and must be taken into account when planning the work.

Also, the system will not understand spelling errors, and the user will receive the error message

"That's not a verb I recognise" if a user mistypes.

This can become an issue if the user struggles with spelling and becomes frustrated with multiple error messages over the course of their experience.

## Research Plan

```
cleanup is a scene.
cleanup begins when the trash can contains dirt.
when cleanup begins:
    say "You dump the dirt into the can and put the dustpan away. Hopefully you'll be finished soon so you
    can meet up with all of your friends. One of your school friends was supposed to meet with you and you
    really don't want to miss seeing her. Sometimes, you would stay over her house on the weekends. Her
    family has a radio and you get to listen to President Roosevelt's fireside chats. You remember that one
    during one he said 'The only thing we have to fear is fear itself.' ";
    now the dustpan is in the pantry;
    now dirt is in the trash can;
    move knowledge six to intscore;

tidytable is a scene.
tidytable begins when the cracker package is in the pantry and the flour jar is in the pantry.
when tidytable begins:
    say "Even though your pantry is pretty empty, you managed to get some food from your teenage
    brother's work. It reminds you how you read that President Roosevelt's wife, Eleanor, would do a lot of
    work for social justice like how she worked with the National Youth Administration to help get work
    for younger Americans. It certainly helped your brother. ";
    move knowledge seven to intscore;

Understand "hang [something] on[something]" as putting it on.

Mother's hat is a wearable object in the shack.

Mother's hat hangs on the wall.

the description of mother's hat is "Her friend made it for her last year."

Instead of putting on mother's hat:
if the player is wearing your hat:
    say "You take off your hat and put on your mother's.";
    now the player is holding the hat;
    now the player is wearing mother's hat.

some newspapers are in the shack. "The walls of the shack are covered in old newspapers. Sometimes you like
to look at the headlines to pass time doing your chores."

the description of the newspapers is "Your mother hung these newspapers up to try to liven up the walls of the
shack. There was no way your family could afford fancy wallpaper."
```

Sample Inform7 code for this project

This research design is based on in-person research and asks the question: how does the use of the interactive fiction work impact learning and enjoyment among students when experiencing the photograph “A Sharecropper’s Shack” in a museum? This question has multiple statistical hypothesis as it has the null hypothesis plus two alternative hypothesis which test learning gains and enjoyment. The learning gains tests quantitative data while the enjoyment tests more qualitative data. This research chooses to include a third hypothesis which tests enjoyment by measuring dwell time to gather further quantitative data. The independent variable of the project is the use of Interactive Fiction while experiencing photograph While there are two dependent variables (a) the learning gains made by participants and (b) the level of enjoyment of the work.

Additionally, the project will be measured in three ways. The learning gains will be measured with the interval scale or change in pre- and post-test score while enjoyment will be measured in an ordinal scale focusing on the change in the results on the Likert scale over pre- and post-survey and interval scale specifically the time spent on task using google analytics and timed observation. Interval scale measurements are often overlooked in design research compared with ordinal scale measurements. Yet they provide concrete, quantitative data measurements compared to the ordinal Likert scale survey data. However, it is important to include qualitative research data when measuring participant enjoyment.

Sample size relative to population will be measured in the number students to the museum (N) compared to the number of students (n) who volunteer to use the Interactive Fiction. Ideally, the number of participants per group would be sixty-four as per Cohen’s (1992) work but this information can only be measured after completing the research as it unknown how many people would attend the museum over the course of the study. The formulaic representation of this percentage is:

$$\frac{n\text{-voluntary student participants}}{N\text{-Museum students over research time}} = \text{percent of population participating in the study}$$

Hypotheses for the research are as follows:

1. Null Hypothesis Learning: There is no percentage change on the post-test scores between groups

$$H_0: \mu_{\text{percentage change in the IF Game}} = \mu_{\text{percentage change in the NO IF Game}}$$

Alternative Hypothesis Learning: The alternative group has a greater positive percentage change on the post-test.

$$H_1: \mu_{\text{positive percentage change in the IF Game}} > \mu_{\text{positive percentage change in the NO IF Game}}$$

2. Null Hypothesis Enjoyment (qualitative): There is no difference in Likert scale post-survey measurements between the groups

$$H_0: \mu_{\text{Survey responses Likert scale changes in the IF Game}} = \mu_{\text{Survey responses Likert scale changes in the NO IF Game}}$$

Alternative Hypothesis Enjoyment (qualitative): The IF group has higher Likert scale post-survey measurements

$$H_2: \mu_{\text{Survey responses Likert scale changes if the IF Game}} > \mu_{\text{Survey responses Likert scale changes if the NO IF Game}}$$

3. Null Hypothesis Enjoyment (quantitative): There is no difference in dwell time between the groups

$$H_0: \mu_{\text{dwell time on photo using if IF Game}} = \mu_{\text{dwell time on photo using if NO IF Game}}$$

Alternative Hypothesis Enjoyment (quantitative): The IF group has greater dwell time

$$H_3: \mu_{\text{dwell time using if IF Game}} > \mu_{\text{dwell time using if NO IF Game}}$$

## Research Design

The research design is minimal-risk and as the stakeholders in this project include school faculty and administration, field trip students will be the primary subjects. Schools will be provided with IRB parental permission forms and participant consent agreements that can be sent home with student permission slips to ensure that protocols are followed. Parental permission can be attained on site for students who visit the museum with parents. Permission slips will be given identification numbers which will then be written on stickers used for identifying voluntary participants. Participants will be given pre-tests and surveys with demographics and identification numbers included and then half of these participants will be provided with a pamphlet including the photo and the other half with the IF game. Student dwell time will be recorded and timed in-person and using camera recording and in-situ logs will

be recorded as well. Participants will not be given a time frame but told to inform researchers when they are finished where they will be provided with post-tests and surveys.

The research design will be based on between-subjects design with two groups. The first group will serve as a control group and will be provided with an informational pamphlet containing the same information as the IF game, but with no interactivity. Group two will use the IF game to interact with the photograph. Sample sizes will not be random as the research is trying to determine how middle school students are impacted by Interactive fiction. The age range will be 11-15 years and primarily focus on students. A visual representation of the research design is:

|                  |            |          |                                                                                    |                                      |           |             |
|------------------|------------|----------|------------------------------------------------------------------------------------|--------------------------------------|-----------|-------------|
| <b>Group one</b> | Pre-survey | Pre-test | <b>Control Condition (no intervention, a pamphlet with historical information)</b> | Recorded time interacting with photo | Post-test | Post-survey |
| <b>Group two</b> | Pre-survey | Pre-test | <b>Experimental Condition one (with intervention, IF Game)</b>                     | Recorded time interacting with photo | Post-test | Post-survey |

Data analytics will be measured using google analytics on the IF game website. This information will be collected and measured to determine its relevancy for the work. In-Situ logs would be beneficial to understand the virtual “dwell time” spent on the game and compare it to the average time spent observing photographs in museums. Google Analytics can be applied to any website to track a number of data elements for no cost. It has the option to enable session duration, bounce rate, and number of individuals using the site. Unfortunately, Google provides no cost options at the expense of storing and using the data for its own purposes. Any website that the game is hosted will not ask the user for personal information, but location and IP are tracked by the analytics.

**Pre- and Post-Test**

These measure the users' knowledge of the time period the photograph was taken in and whether there are learning gains made after experiencing the project.

**IF Pre/Post Test**

1. When was the Great Depression?

- 1909-1919
- 1919-1929
- 1929-1939
- 1939-1949
- Other

2. What was the stock market crash that set off the Great Depression called?

- "Black Tuesday"
- "Black Thursday"
- "Red Wednesday"
- "Red Friday"

3. What were the "Fireside Chats"?

A series of radio talks led by Franklin D. Roosevelt a

4. Who was the President from 1929-1932?

Herber Hoover

5. The First Lady known for her commitment and influence on social reform from 1933-1945 was...

Elanor Roosevelt

6. What was the slang term for a shantytown during the Great Depression?

Hooverville

7. Journalist who reported on corruption and social hardships during the Great Depression were called...

Muckrakers

8. The legislation to fix the flaws in banks and the stock market including plans to aid the unemployed and farmers as well as public works projects and housing was called...

9. Farmers who rented land and paid a landlord with part of their harvest were called...

10. Who was the president from 1932-1945?

## Pre-Survey

The pre-survey is used to measure the emotional and technical familiarity on the subject using a Likert scale. Subjects addressed are familiarity with text-input, perceptions of history, and opinions on artistic subjects.

### Pre-survey

1. How interested are you in the history of the Great Depression?

- Very uninterested
- Uninterested
- Somewhat uninterested
- Neither interested nor uninterested
- Somewhat interested
- Interested
- Very interested

2. How knowledgeable are you about the history of the Great Depression?

- Very unknowledgeable
- Unknowledgeable
- Somewhat unknowledgeable
- Neither knowledgeable nor unknowledgeable
- Somewhat knowledgeable
- Knowledgeable
- Very knowledgeable

3. How relatable do you find subjects in art?

- Very unrelatable
- Unrelatable
- Somewhat unrelatable

- Neither reliable nor unreliable
- Somewhat reliable
- Reliable
- Very reliable

4. How do you perceive historical figures?

- Very unreliable
- Unreliable
- Somewhat unreliable
- Neither reliable nor unreliable
- Somewhat reliable
- Reliable
- Very reliable

5. How knowledgeable are you with Interactive Fiction?

- Very unknowledgeable
- Unknowledgeable
- Somewhat unknowledgeable
- Neither knowledgeable nor unknowledgeable
- Somewhat knowledgeable
- Knowledgeable
- Very knowledgeable

6. How comfortable are you with text-input on your device?

- Very uncomfortable
- Uncomfortable
- Somewhat uncomfortable
- Neither comfortable nor uncomfortable
- Somewhat comfortable
- Comfortable
- Very comfortable

7. Can you identify parts of speech (noun, verb, preposition, etc.)?

- Yes
- No

## Post-Survey

This focuses on the overall enjoyment and emotional connection to the work and subject. It also focuses on the participants perceived learning on a Likert scale.

### Post-survey part 1

1. How satisfied were you with your experience?

- Very dissatisfied

- Dissatisfied
- Somewhat dissatisfied
- Neither satisfied nor dissatisfied
- Somewhat satisfied
- Satisfied
- Very satisfied

2. How relatable did you find the story?

- Very unrelatable
- Unrelatable
- Somewhat unrelatable
- Neither relatable nor unrelatable
- Somewhat relatable
- Relatable
- Very relatable

3. How connected did you feel to the photograph's subject?

- Very disconnected
- Disconnected
- Somewhat disconnected
- Neither connected nor disconnected
- Somewhat connected
- Connected
- Very connected

4. How interested are you in the history of the Great Depression?

- Interested
- Somewhat interested
- Very uninterested
- Very interested
- Uninterested
- Somewhat uninterested
- Neither interested nor uninterested

5. How stimulated was your imagination?

- Very unstimulated
- Unstimulated
- Somewhat unstimulated
- Neither stimulated nor unstimulated
- Somewhat stimulated
- Stimulated
- Very stimulated

6. How frustrating was the gameplay?

- Very difficult



- Difficult
- Somewhat difficult
- Neither easy nor difficult
- Somewhat easy
- Easy
- Very easy

7. How challenging did you find the puzzles?

- Very difficult
- Difficult
- Somewhat difficult
- Neither easy nor difficult
- Somewhat easy
- Easy
- Very easy

8. How easy was it to learn through the game?

- Very Difficult
- Difficult
- Somewhat difficult
- Neither easy nor difficult
- Somewhat easy
- Easy
- Very easy

9. How much do you feel you learned?

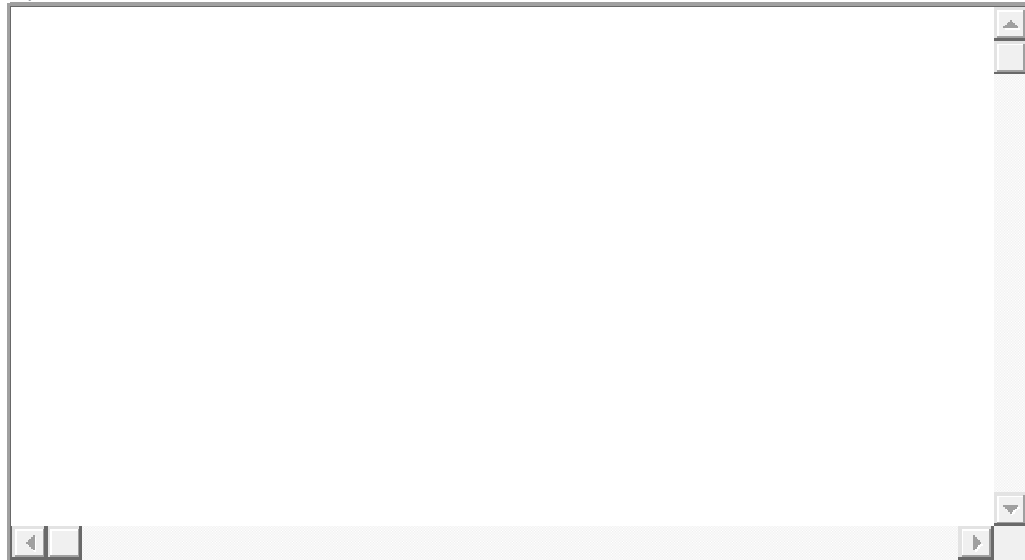
- None at all
- A little
- A moderate amount
- A lot
- A great deal

10. What other works does this photograph remind you of?

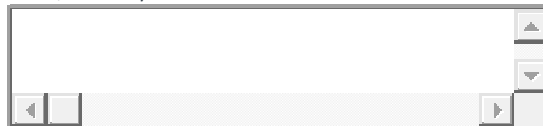
11. Did the game help you think of any relatable experiences?

- Yes
- No

If yes, describe them.

A large, empty text input field with a scroll bar on the right side. The field is rectangular and occupies most of the upper half of the image. It has a thin grey border and a light grey background. The scroll bar is located on the right edge, with a vertical track and a small grey slider.

12. Questions/Comments:

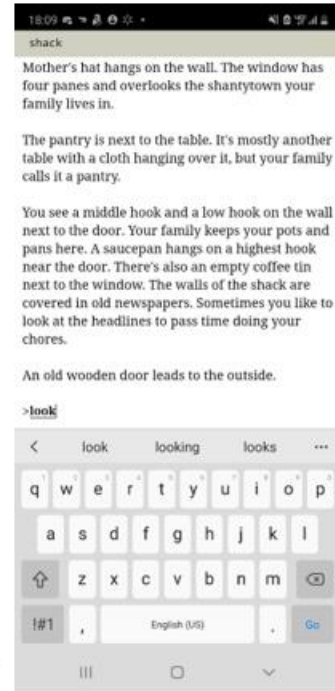
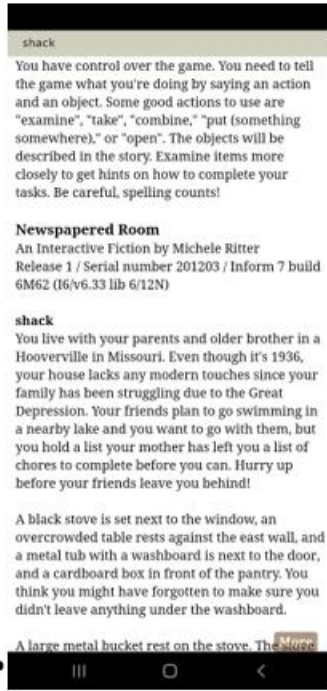
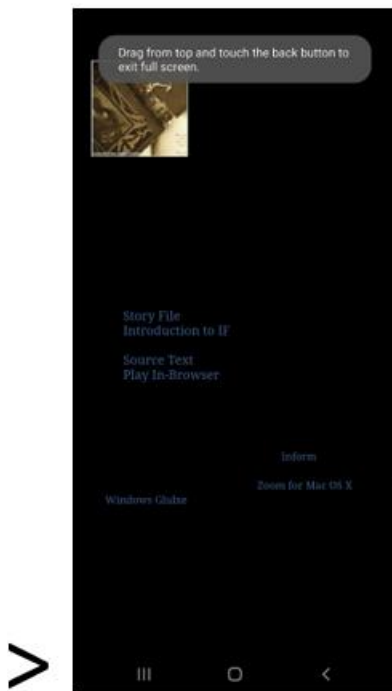
A smaller, empty text input field with a scroll bar on the right side. It is rectangular and occupies the lower half of the image. It has a thin grey border and a light grey background. The scroll bar is located on the right edge, with a vertical track and a small grey slider.

## User Facing Design

The game is currently hosted on itch.io and can be accessed directly through the site or by using a QR code. By selecting the “Run Game” option, the game will open further options. From there the participant is taken to a page where they can open an in-depth description of the mechanics of interactive fiction, the source code, or to run the game in-browser. The source code is useful for stakeholders who would like to know the educational content and any shortcuts for solving the game’s puzzles as this is listed withing the code with a little intuiting. The participants will select to run the game which will provide them with a simplified version of the instructions and description of the photograph in text form. All interactable items are listed in this description except for intentionally hidden items necessary to the game’s puzzles. This process on a smartphone would look like this:



-OR-



Breakdown of user interaction of the game.

Notes

The game is publicly facing and can be found at <https://rittermi.itch.io/newspapered-room>.

Moving forward work will primarily be published through ACM focusing on SIGCHI and some of its more

specialized groups such as ACM CHI—Computer-Human Interaction conference and MobileHCI—Mobile Human-Computer Interaction (ACM, Inc., 2020). Another option is to publish through educational interest groups such as the Technology in education Conference (World Academy of Science, Engineering and Technology, 2020). The last option is to publish the work through the Electronic Literature Organization ELO which is interested in forms of electronic literature such as interactive fiction (Electronic Literature Organization, 2020).

## References

- ACM, Inc. (2020). Association for Computing Machinery. <https://www.acm.org/>.
- Biography.com Editors. (2019, October 24). *Herbert Hoover*. Biography.com. <https://www.biography.com/us-president/herbert-hoover>.
- Biography.com Editors. (2020, March 12). *Franklin D. Roosevelt*. Encyclopædia Britannica. <https://www.britannica.com/biography/Franklin-D-Roosevelt>.
- Cohen, J. (1992). A Power Primer. *PsycARTICLES*, 112(1), 155–159. <https://doi.org/10.1037//0033-2909.112.1.155>
- CPALMS. (2019). *Welcome to CPALMS*. Home. <https://www.cpalms.org/Public/>.
- The Editors of Encyclopaedia Britannica. (2020, April 14). *Muckraker*. Encyclopædia Britannica. <https://www.britannica.com/topic/muckraker>.
- The editors of ushistory.org. *The New Deal*. ushistory.org. <https://www.ushistory.org/Us/49.asp>.
- Electronic Literature Organization. (2020). Electronic Literature Organization. <https://eliterature.org/>.
- Franklin, R. D. (1933, March 4). "*Only Thing We Have to Fear Is Fear Itself*": FDR's First Inaugural Address. HISTORY MATTERS - The U.S. Survey Course on the Web. <http://historymatters.gmu.edu/d/5057/>.
- Frantilla, A. *Hooverilles in Seattle*. Hooverilles in Seattle - CityArchives. <http://www.seattle.gov/cityarchives/exhibits-and-education/digital-document-libraries/hooverilles-in-seattle>.
- Google. *Redirecting...* Google. <https://analytics.google.com/analytics/web/>.
- History.com Editors. (2010, April 23). *The Fireside Chats*. History.com. <https://www.history.com/topics/great-depression/fireside-chats>.
- History.com Editors. (2010, June 24). *Sharecropping*. History.com. <http://www.history.com/topics/black-history/sharecropping>.
- Kahoot! (2020, December 9). *Learning games: Make learning awesome!* Kahoot! <https://kahoot.com/>.
- Klimas, C. *Twine is an open-source tool for telling interactive, nonlinear stories*. Twine / An open-source tool for telling interactive, nonlinear stories. <http://twinery.org/>.
- Marzano Editorial Team. (2020, May 21). *Overview of Marzano's Model of Teaching Effectiveness: Resilient Educator*. ResilientEducator.com. <https://resilienteducator.com/classroom-resources/overview-of-robert-marzanos-model-of-teaching-effectiveness/>.

- Michals, D. (2017). *Eleanor Roosevelt*. National Women's History Museum.  
<https://www.womenshistory.org/education-resources/biographies/eleanor-roosevelt>.
- Mydans, C. (1936). *Newspapered Room of Sharecropper's Shack in Colton and Melon Fields*. photograph, Orlando.
- Neville, D. O., Shelton, B. E., & Mcinnis, B. (2009). Cybertext redux: using digital game-based learning to teach L2 vocabulary, reading, and culture. *Computer Assisted Language Learning*, 22(5), 409–424.  
<https://doi.org/10.1080/09588220903345168>
- OCPS. Teacher Evaluation Resources.  
[https://www.ocps.net/departments/professional\\_learning\\_department/evaluation\\_systems/teacher\\_evaluation\\_resources](https://www.ocps.net/departments/professional_learning_department/evaluation_systems/teacher_evaluation_resources).
- QR Code Generator. (2019, June 7). *QR Code Generator: Create Your Free QR Codes*. QR Code Generator Start Comments. <https://www.qr-code-generator.com/>.
- renpy.org. (2020). *What is Ren'Py?* Announcements Atom. <https://www.renpy.org/>.
- Romer, C. D. (2020). *Black Thursday*. Encyclopædia Britannica. <https://www.britannica.com/topic/Black-Thursday>.
- Romer, C. D., & Pells, R. H. (2020). *Political movements and social change*. Encyclopædia Britannica.  
<http://www.britannica.com/event/Great-Depression/Political-movements-and-social-change>.
- Showbie Inc. (2019, November 13). *Home*. Socrative. <https://www.socrative.com/>.
- World Academy of Science, Engineering and Technology. (2020). *ICETT 2022: 16. International Conference on Education, Teaching and Technology*. Open Science Research Excellence.  
<https://waset.org/education-teaching-and-technology-conference-in-june-2022-in-toronto>.