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P5: Working Prototype

Prompt:

Reflect on the data collected from Conceptual Use Study. What did you learn from the data you collected in Studio? What parts of the process were clear? What parts were difficult? What do the measures you collected tell you about the utility of the prototype? Is there a clear winner from the two prototypes you tested, or are there elements from each to combine together? Write out a few paragraphs (1-2 pages) summarizing what you learned from the Conceptual Use Study, including evidence from the data you collected. For convenience, please include the data you collected from the Conceptual Use Study (even though you did submit that as part of P4).

The data that we collected during our Conceptual Use Study was very insightful. We learned each of our prototype's strengths and weaknesses, and were even surprised when our users had some novel ideas about how we could improve each individual design. For example, apparently many users had the same misconception about the function of one of our 'Back' buttons in our primary (quiz) prototype, and after going back and looking at in within the scope of our design we agreed that it could be a source of confusion for many users. By removing the button we were able to get rid of additional page clutter and force the user to focus on the primary content within the page. In addition to this, we also learned that although our dark horse prototype was able to complete the core task faster than our primary prototype, users typically found our primary prototype to have an overall more positive user experience. Our users informed us that our quiz design was "simplistic and just made more sense," even though our dark horse prototype allowed them to access information faster. However, because our primary goal is to edify the user, our quiz prototype has much more potential. Our users stated that because the quiz prototype forced them to recall information, they were much more engaged in what they were learning after getting a question incorrect.

For our primary prototype, all the steps were clear save a few. Users typically experienced confusion during the transition between steps three and four. This was because most users were expecting to be taken to a page of articles after clicking on a specific topic, and not a page with a quiz on the topic they had selected. This is understandable, and one aspect of our prototype that we are currently working on is a way to inform users that our application involves a lot of Q/A without ruining the overall flow of the design. The next step that confused users was when they were prompted to click the 'Back' button brought up earlier. Most figured that the button would take them back to the article, and not back to the quiz results page. We rectified this by simply getting rid of the entire button (due to the fact that most browsers include their own), resulting in reduced clutter and less overall user confusion.

For our dark horse prototype, the step most users struggled with was when we asked them to type in a question to our chatbot. This was because some users had trouble actually identifying where the chatbot was. From our design perspective, we thought that the presenting the chatbot in the middle of the screen on the homepage and then off to the bottom right while reading articles made sense. However, after we went back and looked at it we concluded that having the chatbot appear on different sides of the screens during the duration of the core task could be confusing for new users. One fix would be to have the chatbot simply be a internet browser plugin, making it fixated in one corner regardless of the website the user is on. Fortunately, the rest of the steps in our dark horse procedure were all completed without any roadblocks.

Some of the measures that we collected were difficult to analyze. We decided to measure the response time between steps, the number of clicks taken for each step, and whether or not the user was able to accomplish the core user task. The most difficult to draw any real conclusions from was the number of clicks taken for each step. This was because both prototypes had different numbers of clickable buttons/links, so to try and analyze which prototype accomplished the core task faster from this metric was not fruitful. From our perspective, both prototypes were able to complete the core task, so this metric was also not very helpful in trying to identify any strengths and weaknesses between the two. The metric that was useful to us was the response time between steps, or how long the user took to go from one step to the next. Even though both prototypes had a different number of procedural steps to follow, measuring the response time between steps allowed us to determine where in our design users were getting stuck for the longest, and we were then able to look at those situations and ask ourselves what we could edit to get the greatest reduction in time taken between steps.

While both prototypes definitely had their strengths and weaknesses, we ultimately felt that our primary (quiz) prototype was able to deliver on our primary goal of edifying the user more than our dark horse prototype was able to. This was because both groups that we tested claimed to have learned much more from our primary prototype than our dark horse prototype. Additionally, to create the dark horse prototype we would need a very advanced AI chatbot capable of scanning millions of articles and returning the correct information even to the most discrete of questions.

Data we collected from the Conceptual Use Study:

Primary Quiz Prototype Procedures:
1. Take a few seconds to observe the landing page.
2. Scan through possible topics.
3. Find the article on forest fires in California and click on it.
4. Look through the quiz and answer the questions.
5. Look through the results.
6. Click on the link related to the first incorrect answer.
7. Read the relevant fact about the California fires.
8. Head back to the quiz results page.

9. Navigate to the article.

Dark Horse Prototype Procedures:
1. Look at suggestions.
2. Type in a query.
3. Find the answer to your query.
4. Ask a question to the chatbot.
5. Ask a different question to chatbot.
6. Find an article that has different bias from this article.

Post-Procedural Questions:
1. At any point, did you feel stuck or unsure of what to do?
    Quiz: Between steps 7 and 8.
    Dark Horse: Between steps 2 and 3.
2. Did you feel like you completed the core task?
    Quiz: Yes
    Dark Horse: Yes
3. Did you find that it was difficult to follow the steps in procedure? Which steps and why?
    Quiz: Was expecting to see articles after step 3, but saw a quiz instead. Confused about the function of the return button, assumed it was going back to article.
    Dark Horse: Confused about where to interact with the chatbot.
4. Which steps took the longest?
    Quiz: Wrong answer page takes too long.
    Dark Horse: Finding the chatbot is not obvious to new users.

Measurements:
-   Response Time - Somewhat slow for both prototypes, but mostly due to them being low-fi and difficult to interact with (~7sec at hard steps, ~2sec at all others).
-   Number of 'Clicks' - Too hard to measure due to low-fi (also was dependent on number of clickable actions on the page, which were always changing).
-   Accomplished core user task? - Yes for both prototypes.

Comparative Questions:
1. Which user interface completed the core task the fastest?
    Dark Horse: Using chatbot can help you go to the information directly.
    Quiz: You need to go to an article for each wrong question, making the time it takes to get information much longer.
2. Which user interface had a more positive user experience?
    Quiz: The idea is simplistic and just makes more sense.
3. Which user interface did you feel you learned more from?
    Quiz: Forced recall of information, a large part of the learning process.
    Quiz: Simple and easy to use. Felt convenient to get the facts after taking the quiz.

Define your final prototype design concept. It could be a refinement of one of your previous prototypes, a hybrid, or something completely new. Feel free to use what you've learned about the design space through all the P1-P4 assignments, plus what you've seen in others' work, to create your final prototype. It's not too late to do some brainstorming to refine your idea. Make sure it delivers some meaningful utility to the users.

We chose to stick with a refined version of our initial how might we statement. Our HMW is:

"*How might we make reading the news more about learning something new, and less about reinforcing old viewpoints?*"

We chose to refine and implement our P2 design (the quiz prototype). In P2, our simple prototype was a powerpoint presentation in which the core task was to find information on wildfires in California by reading an article linked through our web application. The user went through a series of questions and was given either positive reinforcement when answering questions correctly or negative reinforcement when answering questions incorrectly. Incorrect answers were then displayed along with links to other websites containing explanations as to why the answer was incorrect. After reading each brief correction for incorrect answers, the user could choose to be redirected to the full article. We refined this design by making the experience topic-focused rather than article-focused. In our new design, the user is encouraged to explore topics rather than articles, take a quiz to demonstrate sufficient knowledge on the topic, and finally read unbiased articles and primary sources whenever they have gaps in their knowledge (get a question incorrect). This centers our design around a more diverse type of learning and in doing so forces the user down a path containing only real sources and facts. Because our design is now focused around topics, our users are now able to read articles pertaining to a generalized topic from differentiating political spheres.

State Diagram:

Home Page

User Enters

User clicks on True/...

User clicks on wildfire

Quiz State

Donald Trump Quiz

Wildfire Topic Quiz

Quiz Answers

User Submits

All ans. correct

≥ 1 Ans. wrong

Results Congrats Page

Results w/ correct Answers

Primary Source Article w/ Ans.

Clicks to go back to results

User clicks on more info for a given, incorrect ans.

Video URL: https://youtu.be/oXe2w6jIyo4

GitHub Repo URL: https://github.com/byeah/cs160_project