

Researching User Experience II: Final Research Report

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Executive Summary

Hungry Ducks, a Eugene, Oregon based food ordering website that allows users to choose their favorite local restaurant and place orders for pickup or delivery, faces stiff competition from other established food ordering websites that have substantial advertising budgets and well implemented features. This research project set out to understand how users interact with Hungry Ducks and their opinions of online food ordering websites so that design recommendations could be made that inspire the development of a highly efficient, user friendly interface.

The following research question guided the research performed in this project:

“What are the strengths and weaknesses of the Hungry Ducks website as they pertain to usability?”

The two primary research methods used to address this question were user interviews and usability testing. Prior to conducting research, participants were screened to assure they met the qualifications of one of two predefined target profiles. For the user interviews, participants were asked a series of questions regarding online food ordering. For the usability testing, participants attempted to perform tasks on the Hungry Ducks website.

After data was collected and analyzed, the following key findings were discovered:

- All participants shared similar opinions on how information should be prioritized on food ordering website homepages, including prominent and easily discoverable menus and useful filtering options, like cuisine type, ratings, and price
- Majority of participants preferred to checkout as a guest rather than create an account
- Majority of participants began their search for food via a food aggregating site, like Yelp, or through a search engine
- All participants were able to successfully complete the four tasks given to them for the usability testing

- While the time on task for each participant varied, all participants took similar paths to completing the tasks given to them

Based on the key findings, the following recommendations were made for strengthening and improving the Hungry Ducks website:

- Improve the search functionality through better and more useful filtering options
- Allow checkout as a guest for users who don't want to create an account
- Improve menu appearance and organization from individual restaurants on the site by incorporating images and interactive design elements, like animations

It is important to note that this project has limitations. While the participants successfully completed all tasks in the usability test, other critical features were not tested in an effort to maintain brevity; therefore, the success rate does not necessarily indicate that the website is without flaw in its current iteration. Additionally, other research methods, like competitive analyses, were omitted for the sake of time that could have yielded important data for future redesign efforts. Hence, the research data gathered in this study is limited, but there is ample need for more research to be conducted moving forward.

Research Overview & Research Question

Hungry Ducks, a website designed to order food online from restaurants in the city of Eugene, Oregon for pickup or delivery, is a useful tool for college students and local residents alike. Users can select their favorite cuisine from a list of restaurants, view the menu, and place an online order without having to leave the site. The service is convenient, quick, and beneficial to restaurants that can't afford the time or money to dedicate to their own food ordering site. However, facing competition from similar sites like Grubhub and Eat24, it's important that Hungry Ducks maintains a high level of usability for its users to keep its business lucrative and relevant.

To address any usability concerns, it's necessary to implement a well-crafted user research protocol that examines the mindset of the users and how the website makes them feel while trying to accomplish specific tasks. For example, does the site make sense at every stage of the ordering process and can users successfully place an order without any problems? The goal of improving the Hungry Ducks website lies in understanding the deeper, more complex thought processes that users have. Through a selection of key research methods, like user interviews and usability tests, those thoughts can be drawn out and analyzed to create an intuitive, feature-rich website that prioritizes the user experience.

The first step in achieving research goals is to articulate a specific research question that shapes and guides the project moving forward. Considering the nature of the site and what it offers its users, this project will endeavor to address the following question:

“What are the strengths and weaknesses of the Hungry Ducks website as they pertain to usability?”

Since usability is a primary concern with the Hungry Ducks website, a research question that focuses specifically on strengths and weaknesses will pave the way for valuable feedback that can be used to both reinforce the positive aspects of the current design and rectify the problem areas that may hinder a positive user experience. If, for instance, users are attracted to a particular feature that is functioning and useful, it can be reincorporated into a potential redesign; on the other hand, if a feature is confusing or problematic for users, it can be omitted entirely or recrafted to better suit the needs of the users.

Research Methods

Having articulated a research question that will guide the research protocol for the Hungry Ducks website, it is now necessary to identify and select research methods that will help meet the goals of the project. To reiterate from the research overview, the research question is:

“What are the strengths and weaknesses of the Hungry Ducks website as they pertain to usability?”

Research Method #1: User Interviews (see appendix for user interview questions)

Why was this method chosen?

The first method that will be utilized to address the primary research question is user interviews. User interviews were chosen because they provide one of the best mediums for people to express their thoughts and feelings about a product or service. By asking participants questions openly and directly, it allows them to reflect on their experiences and explain in their own words why they think or see things a certain way. With a proper interview protocol and well-articulated questions, interviews can provide insightful information about the users that can later be used to establish design ideas, layouts, and features that specifically focus on the user experience. Additionally, user interviews can be conducted in a variety of ways, so participants can feel comfortable whether they are being interviewed in a physical location or remotely via video chat. This versatility is important considering the two week time constraints of the project and the difficulties that can sometimes affect recruitment.

How will this method be carried out?

First, interview questions will be developed that help address the primary research question. An interview guide will be created to facilitate the actual interview process. Then, participants will be recruited based primarily on their age and experience level with online food ordering websites. Next, a meeting time and place will be arranged (if it is a physical location) and the participant will be filled in on the necessary details of the

interview. Finally, the interview sessions, with the permission of the participant, will be recorded and their responses will be analyzed.

Research Method #2: Usability Testing (see appendix for usability testing tasks)

Why was this method chosen?

The second method that will be utilized to address the primary research question is usability testing. Usability testing will provide a task based analysis of the Hungry Ducks website, so through direct observation or recordings, determinations can be made as to where the problem areas lie and where the website is working well. Also, since participants can usability test remotely and a designated location is not required, time will be conserved, enabling more focus to be put into creating the tasks that will be tested.

How will this method be carried out?

First, key tasks will be created for participants to work through on the Hungry Ducks website. These tasks will reflect common actions and utilize the important features of the site. Next, participants will be recruited based on age and experience level with online food ordering websites. Once they agree to the study, a time and place will be arranged (if it is a physical location) and their attempts at the tasks will either be observed directly or recorded through a software program. Finally, the results will be analyzed to see where the participants succeeded or failed and design recommendations will be made.

Recruitment Plan

Target Audience Profiles

The following table describes the two primary profile types this research project will focus on and the accompanying attributes they will need to possess to be considered for recruitment.

	Current Hungry Ducks users or users of other online food ordering websites	People who would be interested in using Hungry Ducks or other online food ordering websites
Age Range	18-50	18-50
Gender	Any	Any
Technological Experience	Intermediate to Expert	Intermediate
Relevant/Desired Behaviors	Comfortable ordering food online, orders food online often	Looking for a convenient, quick way of ordering food online, familiar with ordering food online but doesn't do so regularly

Recruitment Screener ([see appendix for screener questions](#))

Outreach Plan

To recruit participants for screening, two different approaches will be used. One approach will involve using Facebook to reach out to friends and acquaintances who would potentially fit the target profile(s). If they are interested and want to participate, they will then be informed about the screener. Depending on the individual's proximity to Eugene, Oregon, they will either be sent a virtual screener via e-mail or presented with a hard paper copy at a mutually agreed upon location in town.

The second approach will involve reaching out to personal contacts. These may include friends or family members, either local or remote. The same procedure will be used with

these individuals as will be used with the Facebook contacts – inform them about the screener and have them take it virtually or in person.

After the screeners are taken, the individuals who meet the criteria for the target profile(s) will be informed that they have been selected as participants in the research study. At this point, the data collection sessions will be scheduled with the participants.

Research Session Logistics

For this study, participants will be interviewed about online food ordering and perform a usability test on the Hungry Ducks website. Participants who are local will be asked where their preferred meeting location would be for both data collection sessions. If they choose their place of residence for the sessions, only a meeting time would need to be agreed upon. If they prefer to take part in the sessions elsewhere, a meeting place and time will need to be arranged. Since the sessions need to be recorded, a private, quieter setting must be chosen, such as a meeting room at a library.

Participants who are remote will take part in the interviews and usability tests virtually. For the interviews, a recorded video chat session will need to take place at an agreed upon time. For the usability tests, the participants will perform tasks on Hungry Ducks and their sessions will be recorded with usability testing software. The usability tests do not need to be monitored in real time, so the timing is at the discretion of the individual; however, they will need to fully complete the usability test within the given time frame of one week. Participants who are local but cannot meet at a physical location will be given the opportunity to perform the usability test virtually, as well.

The following timetable describes when the recruitment, data collection, and data analysis will take place:

Date	Activity
November 9 to November 12	Reach out to individuals via Facebook and through personal contacts for screening
November 13 to November 19	Schedule data collection sessions with participants
November 20 to November 26	Analyze data from research sessions

Data Analysis, Findings, Recommendations & Future Research

Data Analysis

To answer the primary research question posed in the initial phase of this project, two research methods were utilized – user interviews and usability testing. User interviews yielded data qualitatively by having participants describe, in their own words, what is important to them and why. Usability testing yielded data quantitatively, as information was gleaned through metrics such as success rates, time performing tasks, and page views. Below, each of these methods are discussed in greater detail in terms of how the data was analyzed.

User Interviews (Qualitative Data)

Data from user interviews was based on participant responses to seven primary questions regarding online food ordering and four demographic questions. The interviews were audio recorded, listen to several times, and pertinent information was extracted from each participant's responses. The responses were first compiled individually then collectively examined to identify any trends or similarities. Since the data, here, is descriptive in nature, an interpretive analysis technique was used to sort through impressions and look for meaningful insights. By applying critical thinking about the responses and what implications exist within the context of the particular situation, ideas were formulated as to how a strengthened design could cater to the needs, values, and feelings of a generalized userbase.

Usability Testing (Quantitative Data)

Data from the usability testing was based on the performances of the participants as they attempted to complete four key tasks on the Hungry Ducks website. Using a specialized usability testing software program, the participants were evaluated based on how they went about doing a task, if they were able to successfully complete the task, and how long it took them. A statistical breakdown of the information gleaned from the usability studies was generated by the testing software and presented and categorized

based on the participant, task, and path to completion. Ultimately, the data was reviewed and graphs were used to express the results. The objective, concrete nature of the quantitative evaluation enabled data from each participant to be easily compared and contrasted to understand where particular areas of the site made the most sense and where they required more time to fully understand.

Findings (graphical representation)

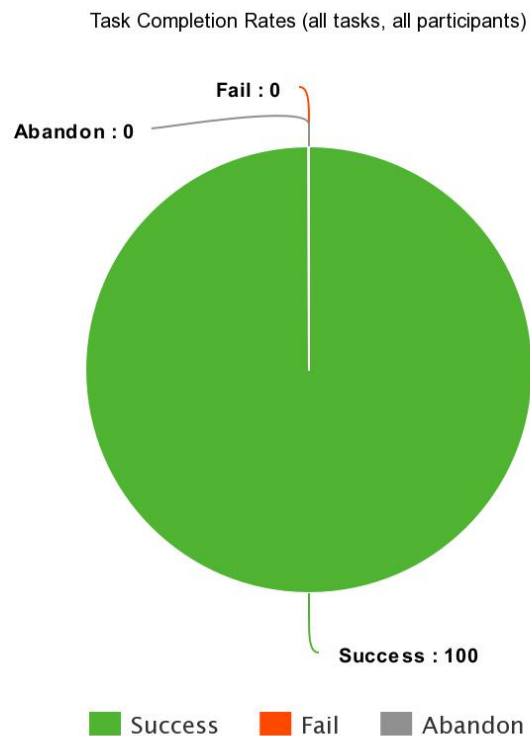
Qualitative Data Summary – User Interviews

The following table shows how participants responded to interview questions regarding food ordering websites and online ordering systems. For each row, items highlighted in green indicate similar responses.

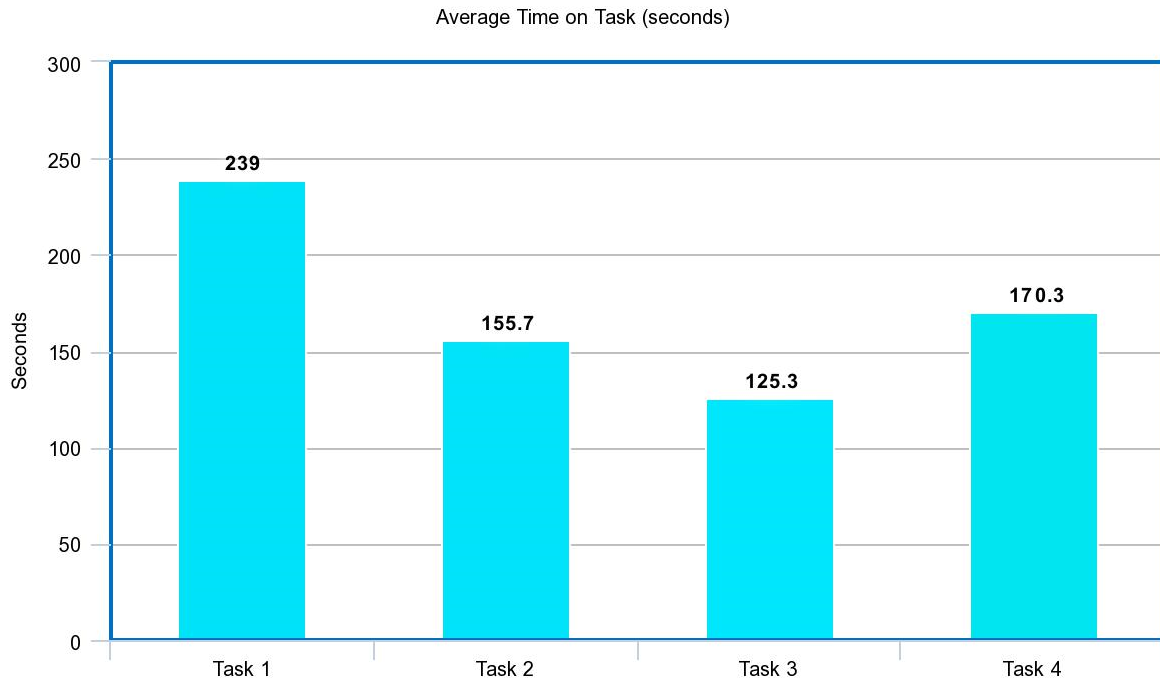
	Participant 1: Female, 35, Highly Experienced with Online Ordering	Participant 2: Male, 38, Highly Experienced with Online Ordering	Participant 3: Female, 28, Moderately Experienced with Online Ordering
Initiating Food Search	Yelp	Yelp (or other aggregating sites)	Google
Homepage Priorities	Menu	Menu	Menu items (as pictures)
What Makes a Good Design	Good categorization	Good categorization, visually appealing	Prominent search bar, hours of operation
What Creates a Good Experience	Saving personal information	Saving personal information, ratings	Reviewable cart
Filtering Priorities	Close by, places that deliver, reviews, highest rated	Cuisine, ratings, price	Cuisine, entrée type, allergies, ratings
Checkout as Guest or Create Account	Always creates an account to save info	Checks out as guest, Facebook Login preferred	Checks out as guest
Leaving a Review on a Different Site	Would leave review if automatically redirected	Would leave review if automatically redirected	Wouldn't leave review if having to leave the site

Quantitative Data Summary – Usability Testing

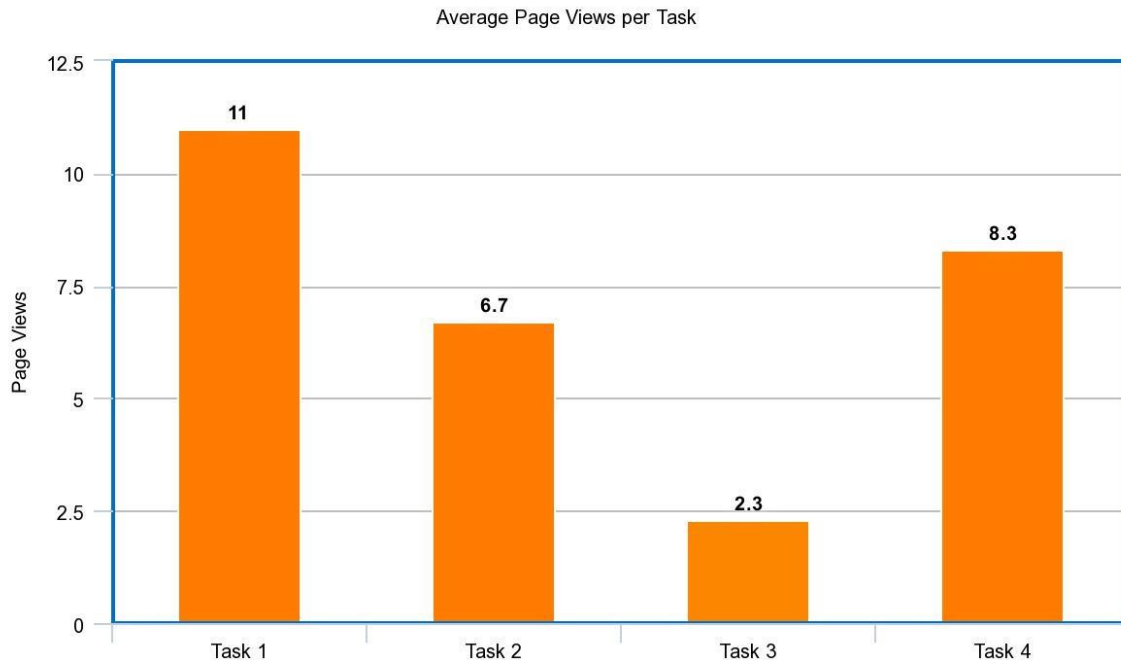
The following three charts and three tables represent the numerical data captured from the usability studies. To understand how participants interacted with the website while performing tasks, task completion rates, average time on task, and average page views per task were considered.



The first chart above shows a 100% success rate across all tasks by all participants.



The second chart above shows the average time on task by all participants.



The third chart above shows the average page views per task by all participants.

Participant 1	Task 1 Time:	244 Seconds
	Task 1 Page Views:	8
	Task 2 Time:	175 Seconds
	Task 2 Page Views:	8
	Task 3 Time:	109 Seconds
	Task 3 Page Views:	2
	Task 4 Time:	175 Seconds
	Task 4 Page Views:	8
Participant 2	Task 1 Time:	161 Seconds
	Task 1 Page Views:	9
	Task 2 Time:	152 Seconds
	Task 2 Page Views:	5
	Task 3 Time:	150 Seconds
	Task 3 Page Views:	3
	Task 4 Time:	140 Seconds
	Task 4 Page Views:	8
Participant 3	Task 1 Time:	312 Seconds
	Task 1 Page Views:	16
	Task 2 Time:	140 Seconds
	Task 2 Page Views:	7
	Task 3 Time:	117 Seconds
	Task 3 Page Views:	2
	Task 4 Time:	88 Seconds
	Task 4 Page Views:	9

The table above shows how many seconds and page views were spent on each task by participant

Findings (description)

Findings from User Interviews

Data from the user interviews revealed similarities in many of the participants' responses, especially with questions involving how information should be prioritized on homepages and online ordering systems in general. In fact, regardless of technological experience or experience with food ordering sites, the participants seemed to share similar viewpoints on how things should be structured and formatted. There was a general consensus that restaurant menus should be easily discoverable and filtering options should always include elements such as cuisine type and ratings. There was also an general agreement on how food searching starts, primarily originating on Yelp or similar aggregated reviewing sites.

A noteworthy piece of data observed was that two of the three participants said they preferred to checkout as a guest when ordering food online and did not want to create an account. This is important, as Hungry Ducks does not currently offer an option to checkout as a guest and requires creation of an account, something that has the potential to impact conversion. Interestingly, though, two of the three participants also said that saving personal information is a key feature that should be included in online ordering systems that are not necessarily food centric. This could indicate that participants have a different attitude towards food ordering websites, as they most likely use them less frequently and are therefore less inclined to want to create an account.

Findings from Usability Testing

For the usability testing, three participants were asked to perform four tasks to the best of their ability that involved using the following key features of the site:

- Adding items to the shopping cart
- Adding items for delivery for a future date and time
- Suggesting a restaurant to add to the site's list
- Editing an order in the shopping cart

In terms of the overall success rate, each participant completed all four tasks 100% successfully. There were differences in the amount of time that each participant took to complete the tasks as well as differences in the number of page views required by each to participant to complete the tasks. Task 1, adding items to the shopping cart, required the most amount of time and page views, while Task 3, suggesting a restaurant to add to the site's list, required the least amount of time and page views. Participant 3 struggled with Task 1, but ultimately managed to successfully complete it, indicating that the task itself would have had lower overall numbers if Participant 3 navigated the task like the other two participants did.

Since the way participants complete tasks is important in understanding what makes sense to the average user when navigating the site, it is worth noting that many of the paths taken by the participants to finish tasks were similar, indicating that the design is functionally sound, at least as far as the four tasks in this study were concerned. Different tasks may produce different results, especially when taking into account the strengths of competitor's sites, which will be discussed later in this report.

Recommendations

In the initial phase of this project, the following research question was proposed to guide and direct the project's objectives:

"What are the strengths and weaknesses of the Hungry Ducks website as they pertain to usability?"

After conducting research and gathering data, these strengths and weaknesses are better understood and have lead to the formulation of design recommendations for a new version of the Hungry Ducks site.

Recommendation #1: *Improve search through better filtering*

Participants indicated that they liked to see useful options for filtering a search on all types of food ordering sites. In its current iteration, Hungry Ducks enables users to browse restaurants/cuisine types as well as search for restaurants directly from the search bar, but doesn't have a clearly defined way of utilizing other search options, like places close by, places that are well reviewed, and places that are most affordable.

Incorporating these and other options, like cuisine that is vegan or dairy free, would provide a better filtering system, enabling more users to choose restaurants better suited to their specific needs. This would also eliminate time spent browsing the site looking for these options that may be shown in less obvious locations. Also, while Hungry Ducks does show users restaurants that are nearby by default after they put in their address, it doesn't specify how far the restaurants are in terms of mileage. Adding this information as a filtering option would be beneficial to users who may decide that pickup is a better option than delivery if the restaurant is close by.

Recommendation #2: *Allow checkout as a guest*

Majority of the participants indicated that they prefer checking out as a guest on food ordering sites because they don't use them frequently enough to want to create an account. As this is a simple feature to add to the site that would assure better conversion rates, it should be included in a redesign so users feel they have the options they need when ordering food online. Also, since many of the Hungry Ducks competitors offer guest checkout, it would put them in a better competitive position with those services.

Recommendation #3: *Improve menus from individual restaurants*

Participants stated in their responses that good menu organization and appearance is a top priority when visiting a restaurant's site. While the restaurant menus on Hungry Ducks are simple enough to navigate, as evidenced by the usability testing, it would be beneficial to enhance the look and add certain elements, like pictures, that would be aesthetically pleasing to certain segments of the userbase. Adding images to the menus would be simple and would not require a significant amount of time to add and reorganize. As with the guest checkout option, many of the Hungry Ducks competitors provide menus with pictures, so this would be a welcome update that would help keep Hungry Ducks on par with the competition.

Future Research

The results of this study revealed both strengths and weaknesses of the Hungry Ducks website, but more research is needed to understand how and where future site improvements can take place. It was discovered in this study that participants were able to successfully complete key tasks on the website, indicating a strong, usable design; however, other tasks can be tested that analyze how well Hungry Ducks compares to the competition. Grubhub, one of the top competitors of Hungry Ducks, offers similar features to Hungry Ducks that appear to be better implemented, so it would be worthwhile to test those features on Hungry Ducks to see how favorably they compare in terms of usability. This point also raises another in that a competitive analysis would serve to directly understand how well Hungry Ducks does versus its competition. Further, if the design recommendations made in this report were implemented, it would be necessary to see how the new design compares to the old design, so research in this respect would be integral to gauging site iterations.

Appendix

Recruitment Screener

The following questions were used to determine the eligibility of an individual for recruitment based on the aforementioned target audience profiles.

1. Please tell us your age

(if under 18 or over 50, terminate)

2. What is your gender?

- ☐ Male
- ☐ Female
- ☐ Other

3. Can you read a computer screen for prolonged periods of time, either with glasses/contacts or without glasses/contacts, comfortably?

- ☐ No, my eyes strain quickly (terminate)
- ☐ Yes, I am able to view a computer screen for prolonged periods of time comfortably

4. How many hours per week, on average, do you use a computer?

- ☐ < 1 (terminate – indicates person may not be sufficiently experienced with technology)
- ☐ 1-2
- ☐ 3-4
- ☐ 5 or more

5. What's your preferred method of ordering food from a restaurant?

- ☐ I prefer calling in my order (terminate)
- ☐ I prefer ordering food in person (terminate)
- ☐ It varies depending on the situation – sometimes I order over the phone, sometimes I order in person, sometimes I order online
- ☐ I prefer ordering online

Data Collection Instruments

User Interview Guide

Introduction

Good afternoon, my name is Dylan Golcher and today I'm going to be asking you some questions about online food ordering websites. Your responses will help in understanding how online food ordering systems are perceived and how they can be improved. With your permission, I will be video recording this interview so I can look at it later to thoroughly analyze your responses. Do I have your permission to record?

Warm Up

...Excellent, thank you. Before we begin, do you have any questions about the interview you'd like to ask? Ok. So, have there been any afternoons or evenings recently where you were too tired, busy, or otherwise unable to cook? On any of those occasions, did you order food from a restaurant for pickup or delivery? What kind of food did you get? How was it?

Interview Questions

Ok, so we're going to get started with the interview now.

#1: My first question for you is when you're hungry and wanting to order food online for pickup or delivery but you don't know exactly what you want, what do you normally do?

#2: Let's say you type in a website to order food and land on the website's homepage. What do you normally look for first and where do you expect to find it?

#3: Can you recall a time where you used an online food ordering website and came across something that was either really clever or intuitively designed? Can you recall a time when something was frustrating or ambiguous in terms of the design?

#4: Ordering food, products, or services online is a fairly standard procedure – you select your items, add them to a cart, and pay. For you personally, is there anything you like or need to see from an online ordering system that makes the experience better for you?

#5: Food ordering websites such as Grubhub and Eat24 allow people to filter their search options to include their favorite type of cuisines (Chinese, Mexican, Indian, etc.). Other than filtering by cuisine, what's important to you in terms of filtering the search options?

#6: When ordering food online, do you prefer to checkout as a guest, if you're given the option, or do you like to create an account? Why?

#7: If you wanted to leave a review for a restaurant you ordered food from, would you still leave a review if you were required to go to a different site to do so?

Ok, I just have a few more questions for you.

#8: What is your age?

#9: What do you do for a living?

#10: Have often do you order food online, either for pickup or delivery?

#11: Have you ever used Grubhub, Eat24, or Hungry Ducks before? If so, how much experience do you have with these sites?

Cool Down

Ok, so how are you feeling about the interview? Was there anything else you wanted to add, or did you have any questions for me at this point? Ok...

Wrap Up

Well, I wanted to thank you for taking the time to do this interview with me. Your responses will be very helpful moving forward. Have a good afternoon/evening!

Usability Test Tasks

Task #1:

You're hungry and you want to pick up food for dinner. You're thinking Mexican. A friend recommended HungryDucks.com to browse local restaurants in the Eugene, Oregon area. From the Hungry Ducks homepage, find the list of Mexican restaurants, choose one you have either had or one that sounds interesting, and add a few of your favorite items to your cart (use address 796 W 13th Ave, Eugene, OR 97402 if not in the area).

Objective: Gauge ability to add item to cart for pickup

Task #2:

A few of your friends are stopping by to watch a football game on TV tomorrow at 7 and you want to have food delivered to your house at 6:45, so the food is there before they arrive. You're thinking you want wings from the restaurant Countryside Pizza & Grill. Add an order of wings to your cart and select a delivery for tomorrow evening at 6:45 (use address 796 W 13th Ave, Eugene, OR 97402 if not in the area).

Objective: Gauge ability to add an item for delivery for the following day

*** Task #3:

You just recently went to Lupita's Tacos in Eugene and loved the food there. You want to place an order for delivery from their restaurant, but you don't see them come up in the list of local Mexican Restaurants. Find the location on the site that enables you to make a suggestion to add Lupita's Tacos to the list of restaurants on Hungry Ducks.

Objective: Gauge ability to suggest a restaurant to add to the website's list

Task #4:

You want to order a pizza for pickup. You select Papa John's from the list of pizza restaurants. First, order a large cheese pizza with pepperoni and add it to your cart. After you've done this, change the order in your cart from a large size to a medium size and save the change (use address 796 W 13th Ave, Eugene, OR 97402 if not in the area).

Objective: Gauge ability to edit an order in the shopping cart

Addendum

*** Usability Test Task #3:

To glean more useful feedback from the participants, this task was changed from asking participants to find restaurants open late at night to suggesting a restaurant to add to the website's list.