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CS 447: I2

Project Topic

My group's project topic is to gain insights and feedback from college-age students with dietary and allergy restrictions about their dietary preferences, challenges related to food allergies and dietary restrictions, and their expectations from an app designed to help them find suitable food options. We hope to gain a detailed understanding of how these students make food decisions every day when eating on and/or off campus and to use this information to design an app that finds food locations that are safe to eat at and provides alternatives to their restrictions.

Participant and Interview Context

I will refer to our first participant as Dylan. Dylan is a college-age male who has a tree nut allergy. He keeps a note on his phone to remind him of exactly what tree nuts he is allergic to because he cannot always remember and wants to be certain. He is mostly allergic to pecans, walnuts, and hazelnuts.

The interview was conducted on the top floor of Dukes Dining Hall, which is a food location on JMU's campus. We were in the corner and sitting at the bar top next to the windows that face Grace parking deck. There were people around us eating and doing homework, and Dylan was sitting in between Josh and me at the bar top. This interview was conducted on October 26, 2023, around 2 PM. It lasted for about 30 minutes.

Session Summary

At the start of the interview, Dylan stated he was a little nervous before we started to record. As we began to introduce the study and its purpose, it looked like he was avidly listening

to what Josh was saying. When Josh started to go through the informed consent portion, Dylan looked content and ready to start the interview; he happily consented to be interviewed.

Dylan is allergic to tree nuts and keeps a note on his phone to remember which nuts he is exactly allergic to. He states that he is mostly allergic to hazelnuts, walnuts, and pecans, although he indicates that there might be other tree nuts he is less allergic to. Dylan isn't sure if he was born with his allergies; he found out he was allergic via an allergy test with his primary physician. When it comes to finding suitable food options on campus, Dylan claims he doesn't have many challenges/issues. Many of the food locations on campus don't include tree nuts in their food. He explained how it's also easy to know whether a food location on campus has tree nuts because they will usually display an information card with all of the ingredients in their food. Dylan finds it easy to eat on campus since the few food places that do use tree nuts clearly state that they do since tree nuts are a common allergy for many.

When Dylan goes to eat off campus, he will usually let the server know beforehand that he has a tree nut allergy. If the food he gets visibly contains nuts, he will ask the server if he can get something else. Dylan conveyed to us that he also does not have a hard time finding suitable food off campus because most food locations do not put tree nuts in their food; tree nuts can also be easily substituted with another suitable ingredient. He talked about how, similar to on-campus food locations, many off-campus locations also state what kind of potential allergens their food contains. At this point in the interview, Josh asked Dylan how he would feel if a food location didn't have any suitable food he could eat, and Dylan asked Josh to repeat the question. He seemed a little anxious at this point, and I think the question Josh asked might have been overloaded/a double-barrel question. Dylan doesn't believe it's necessary to ask the food location to change their menu or the type of food they serve because they have likely already gotten

feedback from other customers with the same or different food allergies; his attitude towards this situation was he would not feel excluded if a food location didn't have any suitable food for him since it's not their fault he has a tree nut allergy.

I noticed that Dylan was still a little restless at this point of the interview; he was swaying his legs and fidgeting with his hands a little. It's possible he was nervous he might say something wrong or misleading. Josh asked Dylan what kind of features he would like an app to have that is designed to find suitable food locations for people with dietary restrictions and allergies. Dylan believes the app should include the location of the food, how it's served (sit down, food truck, etc), a list of possible dietary restrictions/allergens that might be in their food, and a list of alternatives that substitute the ingredients some people cannot eat. When asked if the app should contain information about cross-contamination, such as if a grill is used to cook two different ingredients, Dylan responded in a serious tone that cross-contamination can be extremely dangerous as people can have severe allergic reactions from it; he believes that would be an important feature for the app to include. His response and tone of voice convey to me that he wants safety to be a priority of the app.

Dylan doesn't have any memorable experiences of going to a restaurant and not being able to find suitable food. He did mention there have been some instances of him going to a restaurant and having to change his order after finding out from the server that the food contains tree nuts; however, he has always been able to find something suitable to eat at the same restaurant. Based on his response, I think Dylan feels fairly comfortable with his tree nut allergy and finding suitable food to eat. Dylan's family is aware of his allergy, and they always ask servers if the food they are ordering for him contains tree nuts; they also actively remind him to

check his food for tree nuts. It's clear his family takes his allergy seriously and wants him to be safe.

For the show-and-tell portion, we were not able to observe Dylan order food at a dining location because he had already eaten and many of the places were already closed at the time of the interview. Instead, we asked him to walk us through how he typically orders food at a dining location on campus. Whenever Dylan gets food from Panda Express at Dukes Dining, the food location has information cards that label what ingredients each type of food contains since the food is already laid out in front of the customer and behind little glass panels. He can make an informed decision based on these cards. At Oath Pizza, they have gluten-free options although they do not state all of the ingredients in their pizzas. Dylan mentioned he would have to ask the workers there if their pizza contains any tree nuts. Josh made an important observation at this point that Dylan mostly researches if a food location has suitable food on his own instead of asking the workers for help. Dylan spoke about how he usually sticks to getting the same food since he knows it is safe and doesn't have to investigate if it contains any tree nuts although he will try new food every once in a while. If Dylan is certain that a food location does not contain tree nuts, he won't ask anyone to confirm and will get the food there. If he believes a food location might have tree nuts, then he will proceed to ask a worker about the ingredients they use. I find this interesting because he still runs the risk of having an allergic reaction since he has no way of knowing whether a food location has cross-contaminated their food with tree nuts despite the food he orders not having any. Josh ended the interview by thanking Dylan for participating and stating how we would use the information from the interview in a non-identifiable way.

Takeaways

After conducting this interview with Dylan, I learned that he is fairly comfortable with his tree nut allergy. He doesn't struggle to find suitable food on or off campus and is content with asking workers for help if he is unsure about the ingredients of a food location. I also learned that because tree nuts are a common allergy, many if not most food locations already state whether their food contains tree nuts via information cards on their menu or in front of the customers when they order their food. Besides the information cards explicitly stating the ingredients of their food, many food locations don't have another way of communicating to customers the ingredients of their food. There aren't any existing products in this problem space that expedite conveying this information to customers. I believe this problem domain needs a product, such as an app, that can condense ingredient and alternative ingredient information from each food location into one place; it will especially be useful for those with uncommon and more than one dietary restriction/allergies.

Raw Data

Details about the environment:
- corner of the Dukes Dining hall on the top floor; next to the windows that face Grace parking deck
- Some people around us doing homework and/or eating food
- Sitting on a bar top with participant in between Josh and I

Introduction:
- Participant stated he was a little nervous before the interview
- Stated his name at the start of the interview
- Was avidly listening to introduction as Josh was explaining what the interview was about
- Josh went through the informed consent portion; participant looked content and ready to start the interview; he willingly and happily consented to being interview

Questions:

- Allergic to tree notes; has notes on phone that says what nuts hes allergic to b/c he can't remember all of them sometimes; walnuts, pecans,
    - Not sure if he was born with allergies; did an allergy test and found out he was allergic at the doctor
- Doesn't have issues finding food on campus b/c most food options dont have tree nuts
    - participant said its easy to find suitable food b/c food on campus has descriptions that state what kinds of nuts it contains (nuts are a common allergy for most people)
- When participant eats off campus, he'll let the server know beforehand that he has tree nuts allergies; if food may contain tree nuts and he sees it has nuts, he'll let the server know and ask for something else
    - He doesn't have difficulty finding suitable food options off campus either b/c restaurants state if their food has tree nuts
    - participant seemed a little anxious at this point; had to ask Josh to repeat question; question may have been overloaded with too much information
    - Participant said he wouldn't feel excluded if there was food he couldn't eat at a restaurant b/c its not their fault he has allergies
- Participant was a little restless during this part of interview (swaying legs); thinks app should include location of restaurant, list of possible dietary restrictions in their food, a list of alternative/substitute ingredients
    - Would want to know about cross contamination such as if grill was used beforehand to make something he was allergic to; looked serious and was firm when talking about this
- When we had difficulty finding suitable food, told server if he could get something else
- Family is aware he is allergic and parents will tell people providing food that he is allergic to tree nut

Show and tell:
- At dukes dining, he goes to panda express; panda has a card that lists potential ingredients ppl might be allergic to
- Pizza place doesn't have list of potential problematic ingredients; would have to go out of his way to ask worker if food contains tree nuts
- participant usually sticks with the same food but will try something new from time to time; will either ask worker or look for menu that states whether food contains any problematic ingredients

Participant and Interview Context

Our second participant, who I will refer to as Max, is also a college-age male; he is mostly allergic to eggs, peanuts, and gluten and is slightly allergic to coconut and tuna. Max has had these allergies since he was a kid. The interview was conducted in the same location as the first one with Dylan. It was in the corner of the top floor of Dukes Dining. We were sitting at the bar top with the participant in between Josh and me and were next to the windows that overlook Grace Parking Deck. There were people around us doing homework and/or eating food. The interview was conducted on October 26, 2023, around 2:30 PM, and it lasted for about thirty minutes.

Session Summary

Max seemed comfortable during the introduction to the study and readily consented to being interviewed. He is allergic to eggs, peanuts, and gluten, which are his main dietary restrictions; he is also somewhat allergic to coconut and tuna. Max mentioned that he was diagnosed with these dietary restrictions when he was younger but has not been tested since. When it comes to finding suitable food options on campus, he does face some challenges due to some places not having gluten-free options or their food containing eggs. He talked about how he cannot eat at the Denny's on campus, can't eat some items at D-Hall, and cannot eat anything at the Student Success Center either. Max will usually try to find a protein he can eat, such as pork, beef, or chicken, and will sometimes ask the workers to remove ingredients he cannot eat. He gave an example of how he sometimes orders a burger without the bun and fries and is usually satisfied with it. I noticed that Max was attentive throughout this portion of the interview and seemed pretty confident in his answers. He was actively listening to Josh's questions and provided detailed answers.

For off-campus food locations, Max knows what kind of food he can eat. He talked about how Italian food is not safe due to his gluten allergy and he cannot eat burgers with the bun. Most Asian foods are safe to eat since he is not allergic to the rice or the protein they usually come with. He emphasized how he looks for different genres of food, which could be an important feature to highlight in a future product we design. He made it clear he is usually satisfied with the food he finds to eat off campus. When asked what he would do if a food location he went to didn't have any suitable food, he talked about how he would usually leave and go somewhere else. He might also ask the workers there if they could give him some kind of simple protein alongside rice and/or potatoes; it is evident this is the backup meal that he goes to whenever a food location doesn't have any suitable food since almost all food locations are bound to have simple ingredients like that.

When asked what features he would like for an app that finds suitable food locations to have, Max stated it should allow the user to choose what categories they are allergic to in order to filter out restaurants that don't have any suitable food options. He thinks the app should also contain information about whether a food location has any cross-contamination or if their kitchen is allergen-safe. Max seemed engaged with the interview as he was explaining what features the app should have with hand gestures. I think this was an important topic for him because he kept emphasizing how the features should have safety as their number one priority.

Max explained that whenever he is having difficulty finding something suitable to eat, he is usually in a new area he is unfamiliar with and will have to look at multiple menus from multiple restaurants to find some sort of food he can eat. He gave an example of how he might be hungry at the moment but will spend 20 minutes looking at 20 different restaurants to find suitable food. It's apparent finding suitable food can be time-consuming, especially in new areas

users are unfamiliar with, which can be another important issue that our product addresses. Max referred to how he is the main person making food decisions regarding his allergies since his family is not with him in college. He usually chooses where to eat whenever he is with friends since he knows his dietary restrictions. His family is also aware of his dietary restrictions and will help him out with choosing where to eat whenever they can. I noticed that he was once again actively engaging with the questions Josh was asking and was using hand gestures to answer them. He seemed attentive and content throughout the interview.

For the show and tell portion, we were unable to observe the participant directly get food, so we asked him to explain how he would go about getting food at Dukes Dining during a typical day. Max has been at Duke's Dining a couple of times already and knows where he can and cannot eat. Tacodilla has gluten-free tortillas he can eat, Denny's doesn't have any suitable food options, Panda Express has white rice and chicken teriyaki which is safe, and Oath Pizza has a gluten-free crust, so he can eat there as well. When Max first came to Duke's Dining, he took advantage of the nutrition cards at some food locations to see what ingredients the food contained and if there were any allergens in the food. Max reiterated that is something he would like to see on the app as well. He also talked about how he usually sticks with the same food options although he will try something new every once in a while as long as he knows it is safe. That could be another important feature of the app where users can save their favorite food locations. At the end of the interview, Josh thanked Max for participating and explained to him how we would use the data we collected in a non-identifiable way. I'll note again that Max seemed comfortable throughout the entire interview and answered every question confidently.

Takeaways

One of the main takeaways from this session was learning how the participant deals with food locations whenever they don't have suitable food. He will usually ask the workers there to remove any ingredients he cannot eat, such as the bun of a burger, which demonstrates how people will dietary restrictions cannot enjoy a full meal sometimes. This could be an important feature our product focuses on where it requires food locations to list any alternative ingredients and to allow users to mix and match those ingredients with different menu options. Another takeaway was how the participant knows what genres of food he can and cannot eat; he gave the example of how he cannot eat Italian food due to many items containing gluten but can eat Asian food since many dishes consist of rice and some kind of protein. This could be another feature of our product which allows the user to categorize food locations based on the type of food they serve.

The participant emphasized an app designed to find suitable food options should allow the user to choose what categories of dietary restrictions/allergies they have so they can filter out non-suitable food locations easily. Another important takeaway from the interview session is how time-consuming finding suitable food can be for those with dietary restrictions. Max talked about how he might spend 20 minutes looking at the menus for 20 different restaurants in an area he is unfamiliar with; it highlights how our product should be able to readily filter out menu items from different restaurants that the user cannot eat to save them time when dining out. I also noticed how Max prefers to eat at food locations he is familiar with and knows are safe, so I think our product should have a feature allowing the user to save their favorite food locations.

Raw Data

- Environment is the same as the one with Dylan
- Questions:
  - Allergic to eggs, peanuts, and gluten (main ones); also allergic a little to coconut and tuna
  - Did an allergy test when he was younger to find out he had these allergies
  - When looking for food on campus, does have some challenges; some places have eggs or don't have gluten free options; can't eat at Dennys here, SCC, and at some location at Dhall
    - Places that server meat state if they have any allergens; sometimes will ask for a burger without a bun for example
  - Outisde of campus, he knows what kind of food he can eat; can eat at many Asian locations b/c rice is safe while Italian food has gluten and cannot eat
    - Pretty satisfied with food options off campus
  - If he got food at restaurant he cannot eat, he usually goes somethere else; he might also ask them to bring out simple food he can eat like rice with something else
  - With the app, would like to be able to pick what categories hes allergic to that will then fitler restaurants he can eat at
    - Partgiciapnt was using hand gestures to explain this
    - Taking it seriously
    - Thinks cross contamination is a big issue that should be addressed
  - Experience finding something to eat: might struggle in a new area he is not familiar with; has to look at multiple menus to see what he can and cannot eat
    - Can be time consuming
    - Explaining this with hand gestures; is attentive and seems content
  - Usually is responsible for finding food he can eat unless he goes with family; they are all aware of his allergies; same with a lot of his friends
- Show and tell portion:
  - At dukes, tacodilla has gluten free tortillas he can eat
  - Can't eat at dennys
  - Panda has rice and chicken teriyaki
  - Pizza has gluten free crust
  - Comfortable eating here b/c has been here a few times and is familiar with what he can and cannot eat
  - When he first came to dukes dining, would read the menus and allergy cards each of this food places have to find out what he can and cannot eat
  - Usually chooses the safe option but will try something new from time to time at dukes
  - Participant seemed comfortable throughout the entire time